"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

31058
S/126/61/012/004/020/021
E073/E535

24.2200

AUTHORS: Dunayev, F.N. and Yaroshenko, Yu.N.

TITLE: Volume magnetostriction in iron-silicon alloys

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.4, 1961, 620-622

TEXT: According to the theory of R. Becker (Ref.1: Zs.Phys., 1933, 87, 547) volume magnetostriction is the sum total of three different phenomena: 1) the influence of the demagnetizing effect of the ends of a ferromagnetic on its volume; 2) a change in volume occurring during turning of the magnetization vector in the crystal lattice; 3) a change in volume caused by the magnetization. Investigation of volume magnetostriction is likely to yield useful information on the magnetic and the volume interactions in ferromagnetics. The authors of this paper investigated the volume magnetostriction on iron-silicon specimens in the form of rotation ellipsoids. Four specimens were used, the chemical compositions and the geometrical characteristics of which are given. The silicon content in these alloys varied between 1.05 and 4.10%. The approximate shape of the ellipsoid was:

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major axis, a = 150 mm, minor axis, b = 5.35 mm, volume = 2280 mm^3. All the specimens were heat-treated in vacuum at 1000°C for two hours and, following that, cooled at a rate of 100°C/hour. The change in the volume magnetostriction was by the dilatometric method. The specimen was sealed into a container with a capillary which was filled with distilled water from which the air bubbles were removed by boiling for a long time. To ensure isothermal conditions, the container was placed in a dewar vessel which in turn was placed into a magnetizing solenoid capable of producing fields of up to 6000 Oe, the uniformity of which was maintained throughout the specimen with an accuracy of up to 2%. The displacement of the meniscus in the capillary was measured by means of a microscope. The sensitivity of the equipment was $4.2 \cdot 10^{-8}$ and the relative error of measurement of the volume magnetostriction was about 5%. The results, which are plotted in the paper, show that from a field strength of 1000 Oe onwards up to 5700 Oe the dependence of ω on H is linear, i.e. the volume magnetostriction in this range of fields is due to the para-process. The inclination of the straight line sections of the curves increases with increasing content of silicon in the alloy:

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$d\omega/dH$ increases from $7.3 \cdot 10^{-10}$ for a silicon content of 1.05% to $9.8 \cdot 10^{-10}$ for a silicon content of 4.10%. The results also show that the initial section of the curves, which is usually attributed to the form effect, differs considerably for alloys with various silicon contents although the specimens are of the same shape. With increasing silicon content the $\omega(H)$ curves at the initial range of field strengths are lower and for specimens with 3.40 and 4.10% silicon the volume magnetostriction has negative values in the field range 0 to 500 Oe. This phenomenon cannot be explained solely by saturation magnetization and elasticity moduli and apparently the volume magnetostriction in this range of fields is due to a considerable extent to processes of technical magnetization. There are 1 figure, 1 table and 11 references: 6 Soviet-bloc and 5 non-Soviet-bloc. The English-language references read as follows: Ref.3: Gersdorf R. J.Appl. Phys., 1959, 30, 2018; Ref.4: Gersdorf R. Physica, 1960, 26, 553; Ref.5: Stauss H.E. J.Appl.Phys., 1959, 30, 698.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im.A.M.Gor'kogo (Ural State University imeni A.M.Gor'kiy)

SUBMITTED: April 21, 1961

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32652
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E073/E535

18.8100 1454

AUTHORS: Dunayev, F.N. and Kuznetsova, M.K.

TITLE: On the temperature dependence of the magnetostriction of electrical steels

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.5, 1961, 652-655

TEXT: The dependence was studied of magnetostriction of polycrystalline specimens of electrical steels containing 1.24% Si, 31 (E1), 1.93% Si, 32 (E2), 2.74 and 3.36% Si, 33 (E3) and 4.10% Si, 34 (E4) in the temperature range 20 to 750°C in high vacuum. The equipment used ensured reliable compensation of the thermal deformation of the specimen. The sensitivity of the metering set-up was $3 \cdot 10^{-7}$ mm^{-1}, the error of measuring the saturation magnetostriction λ_s did not exceed 6%; the solenoid enabled obtaining a uniform field of up to 1600 Oe throughout the entire length of the 150 x 3 x 0.5 mm^3 specimens. Prior to the measurements the specimens were annealed in high vacuum at 1000°C for two hours and subsequently cooled at a rate of 150°C/hour. The temperature was measured with a maximum error of ±5°C. As can be

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seen from Fig.1 (curves 1,2,3,4,and 5 relate, respectively, to steels containing 1.24, 1.93, 2.74, 3.36 and 4.10% Si). The curves of the temperature dependence of the saturation magnetostriction for alloys containing up to 4.10% Si show a maximum which shifts towards lower temperatures as the silicon content increases. The temperature dependence of the saturation magnetostriction λ_s in the temperature range Curie point to maximum λ_s was non-linear for all the alloys investigated. The following qualitative conclusions are arrived at:

a) The constants of magnetostriction λ_{100} of all the alloys in the investigated range of composition increase with increasing temperature between 20 and 420°C;

b) The constants of magnetostriction λ_{111} of all the iron-silicon alloys containing up to 4.10% Si are negative and their magnitude decreases monotonically with increasing temperature

c) As can be seen from Fig.4, the constant of magnetostriction of λ_{111} decreases monotonically within the investigated range of compositions, whilst the constant λ_{100} appears to have a maximum for a silicon content of 2.5%. Fig.4 shows the dependence of λ_{max}.

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$\Delta\lambda = \lambda_s - \lambda_{max}$ and the constants λ_{100} and λ_{111} on the silicon content. There are 4 figures and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The English-language references read as follows: Ref.4: Tatsumoto E., Okamoto T. J.Phys.Soc.of Japan, 1959, 14, No.11; Ref.7: Carr W. and Smoluchowski R. Phys.Rev., 1951, 83, 6, 1236.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im.A.M.Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

SUBMITTED: March 22, 1961

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

S/126/61/012/006/019/023
E073/E535

AUTHORS: Dunayev, F.N. and Kalinin, V.M.

TITLE: On the effect of shape in linear magnetostriction

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.6, 1961, 915-917

TEXT: H. E. Stauss (Ref.5: J.Appl.Phys., 1959, 30, 698) has shown that the shape effect for an ellipsoid in a longitudinal uniform field represents deformation by compression and he proposed a formula for calculating the shape effect when magnetizing the specimen above saturation. Stauss has also shown that in the general case the shape effect includes not only the change of the magnitude of deformation of the specimen as a result of interaction of the magnetic poles but also the change in deformation caused by interaction of these poles with the magnetizing apparatus. To determine the effect of shape, the authors used 5 x 5 mm rods, 100 mm long and additional 200 mm rods of the same cross-section and the same material. Specimens of iron with silicon contents of 1.05 and 4.10% were chosen to obtain a low magnetostriction and a sufficiently high saturation

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magnetization; this enabled easier detection of the influence of shape. After machining, the specimens were subjected to high temperature annealing in vacuo at 1100°C for two hours. The linear magnetostriction and the magnetization were measured initially on the 100 mm long specimen on its own and then on this same specimen to which was added the 200 mm long specimen. The magnetostriction was measured by glued-on strain gauges; the magnetization was measured ballistically using a differential coil. The solenoid used had a uniform field for a length of 580 mm and a maximum field strength of 1200 Oe. The results, which are plotted in the paper, indicate that for the specimen containing 1.05% Si, for which the magnetostriction changes from positive to negative, as well as for the specimen containing 4.1% Si, for which the magnetostriction has only positive values, the difference in the magnetostriction values $\Delta A_{\parallel}$ of the short specimen and the specimen with the longer one added is negative for the same value of magnetization. The dependence of $\Delta A_{\parallel}$ on the square of the magnetization I^2 is approximately linear. However, additional investigations are required on this point, since the experimental

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values are such that they would allow plotting a curve which is slightly convex viewed from the I^2 axis. There are 2 figures and 6 references: 1 Soviet-bloc and 5 non-Soviet-bloc. The English-language references read as follows: Ref.2: Birss R. Adv.Phys., 1959, 8, No.31, 252; Ref.3: Gersdorf R.J. J.Appl.Phys., 1959, 30, 2018; Ref.4: Gersdorf R. Physica, 1960, 26, 553; Ref.5: Quoted in text.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

SUBMITTED: May 10, 1961

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

S/048/61/025/012/017/022
B117/B104

AUTHOR: Dunayev, F. N.

TITLE: Magnetic texture of ferromagnetics subjected to external stresses

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1502 - 1507

TEXT: It is suggested that the existing conceptions about the character of magnetic texture and determining the size of this texture be supplemented and modified. For determining the size of the texture formed as a result of rotation of the directions of easiest magnetization under the action of external stresses, the inequality

$$\Delta F_{\sigma\lambda_{111}} > \Delta F_K + \Delta F_{\sigma\lambda_{100}} \quad (9)$$

or what is the same,

$$|\Delta C \cdot \lambda_{111} \cdot \sigma| > \Delta A \cdot K + |\Delta B \cdot \lambda_{100} \cdot \sigma| \quad (10)$$

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Magnetic texture of ...

was derived, $\Delta F_{\sigma\lambda_{111}}$ and $\Delta F_{\sigma\lambda_{100}}$ being on either side of the inequality. If σ has a sufficiently high value, $\Delta A \cdot K$ may be neglected (K = constant of magnetic anisotropy; λ_{100} and λ_{111} = magnetostriction constants; A, B, C = functions at different orientations of σ).

The relation $\lambda_s \sigma \gg K$ (4)

for a distinctly marked texture is to be replaced by

$$|D \cdot \lambda_{111} \cdot \sigma| > K + |E \cdot \lambda_{100} \cdot \sigma| \quad (11),$$

with D and E being certain functions of the orientation of $|\sigma|$ in the case of a monocrystal, and numerical coefficients in the case of a polycrystal. It may be observed from relations (9), (10), and (11) that fulfilling the condition $\Delta F_\sigma \gg \Delta F_K$ (8),

with $F_{\sigma\lambda_{100}}$ and $F_{\sigma\lambda_{111}}$ standing on one side of the inequality, is not at all sufficient for obtaining a magnetic uniaxiality. For this purpose

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Magnetic texture of ...

the relation $|\lambda_{111}/\lambda_{100}|$ must also have a sufficiently high value.

Relation $|\sigma| > |\sigma_i|$ (12) may be used for determining the degree of texture caused by the shift of boundaries (in rough approximation). To differ more precisely between magnetic textures either caused by boundary shift processes or by rotation of the vector $\vec{I}_s$, technical terms such as "shift texture" and "rotation texture" are suggested. The purpose of such terminology lies in the fact that shift and rotation texture in a material with strong anisotropic magnetostriction in the case of stress with equal sign show an inverse character. Magnetization and magnetostriction curves of a polycrystalline sample of an iron silicon alloy with 3.5% Si were investigated. During elongation the deformation of curves I(H) and λ(H) was similar to that in nickel if σ had a high value. In nickel, the vectors $\vec{I}_s$ are oriented in a plane vertical to $\vec{\sigma}$. Apparently, a magnetic texture is produced initially in this alloy in the case of small $[\sigma]$, the vectors $[\vec{I}_s]$ being oriented in the directions of easiest magnetization. But since

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Magnetic texture of ...

$\lambda_{111} < 0$, these directions deviate from the tetragonal crystal axes toward the plane vertical to the direction of stress under the action of tensile stress ($\sigma > 0$), i. e., a texture inverse to that mentioned first is produced. With sufficiently high values of σ, the observed deformation of magnetization and magnetostriction curves is actually caused by this deviation of $\vec{I}_s$. There are 4 figures and 4 references: 3 Soviet and 1 non-Soviet.

ASSOCIATION: Ural'skiy gos. universitet im. A. M. Gor'kogo (Ural State University imeni A. M. Gor'kiy)

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E073/E535

IP-1141

AUTHOR: Dunayev, F.N.

TITLE: On the magnetic texture of elastically stretched transformer steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.1, 1962, 151-153

TEXT: The curves of magnetization and magnetostriction were determined for polycrystalline specimens of transformer steel (3.7% Si) loaded in the elastic range with stresses between zero and 27 kg/mm^2. The maximum error in measuring the magnetization and saturation magnetostriction did not exceed 4 and 6%, respectively. It was found that the magnetization values increased with the load only up to a load of σ = 0.7 kg/mm^2, then they decreased and the curve changed into a straight line. With increasing load, the value of the magnetostriction decreased and then became negative. From a load of 3 kg/mm^2 onwards the negative magnetostriction in weak fields decreased but the magnetostriction in strong fields continued to increase. Thus, the obtained results indicate that at large loads a texture is

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formed for which the vectors of the spontaneous magnetization of the domains are preferentially oriented in the direction of the tension, whilst with increasing tensile stresses an opposite texture begins to form for which the vectors of spontaneous magnetization of the domains are shifted to an increasing extent towards the plane which is perpendicular to the direction of the tensile stresses. This complex nature of texture formation in transformer steel can be explained if it is taken into consideration that the ferromagnetic has a pronounced magnetostriction anisotropy. There are 2 figures.

ASSOCIATION: Ural'skiy gosuniversitet imeni A. M. Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

SUBMITTED: January 3, 1961 (initially)
July 8, 1961 (after revision)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.; KALININ, V.M.

Longitudinal and transverse effect of the shape of ellipsoid specimens of iron-silicon alloys. Fiz.met.i metalloved. 13 no.1:153-154 Ja '62. (MIRA 15:3)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.
(Iron-silicon alloys—Testing)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.; KALININ, V.M.

Effect of the longitudinal and transverse shape on the magnetostriction of iron ellipsoids. Fiz. met. i metalloved. 14 no.3: 462-464 S '62. (MIRA 15:9)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.
(Magnetostriction)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

S/048/62/026/002/023/032
B117/B138

AUTHORS: Dunayev, F. N., and Yakovlev, G. P.

TITLE: Damping capacity in an ordering iron-nickel alloy

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 2, 1962, 284-287

TEXT: This paper was presented at a conference on magnetism and antiferromagnetism. The authors examined experimentally the theoretical conclusion that the ferromagnetic contribution to damping capacity is bound to be sensitive to ordering processes even in alloys with component atoms of similar size. The Fe-Ni-specimens were 300 mm-long wires, 0.6 mm diam., of 66-permalloy (60 % Ni). The measurements were made in vacuo on a torsion oscillation machine with ~1 cps, at various temperatures and degrees of magnetization. The specimens were vacuum annealed for 2 hr at 1000°C and then cooled to 600°C at the rate of 200°/hr. Subsequent heat treatment (quenching or 16-hr annealing at 450°C) was used to induce the anordered or disordered state. It was found that a magnetic field of 50-100 oe will exclude damping capacity due to the ferromagnetism of the

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material. In the range studied the non-ferromagnetic part of damping capacity is independent of the vibration amplitude. At 100 oe this component is only slightly sensitive to the ordering process as compared with the losses caused by ferromagnetism. With this method therefore valuable information can be obtained, both regarding ordering, connected with it, in ferromagnetic alloys with component atoms of similar size. Another interesting characteristic is the vibration period, which is also sensitive to ordering and is related to the shear modulus. G. Vert is mentioned. There are 5 figures and 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Bozorth, R. Ferromagnetizm, IL., M., 1956 (Translation of Ferromagnetism).

ASSOCIATION: Ural'skiy gos. universitet im. A. M. Gor'kogo (Ural State University imeni A. M. Gor'kiy)

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DUNAYEV, F.N.; KALININ, V.M.; SERIKOV, V.V.

Anisotropy of volumetric magnetostriction. Fiz.met.i metalloved. 14 no.5:781-783 N '62. (MIRA 15:12)

1. Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo.
(Magnetostriction)

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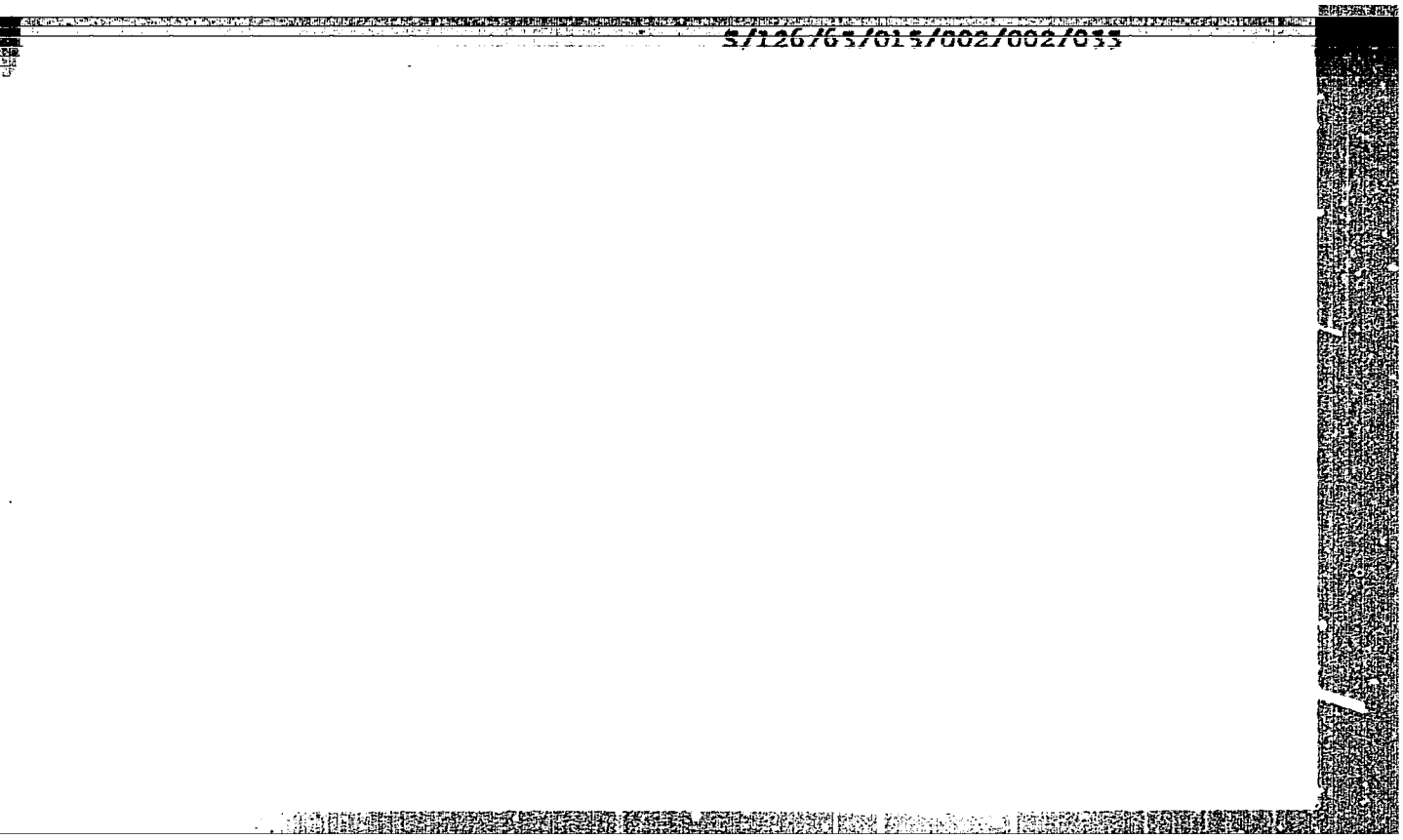

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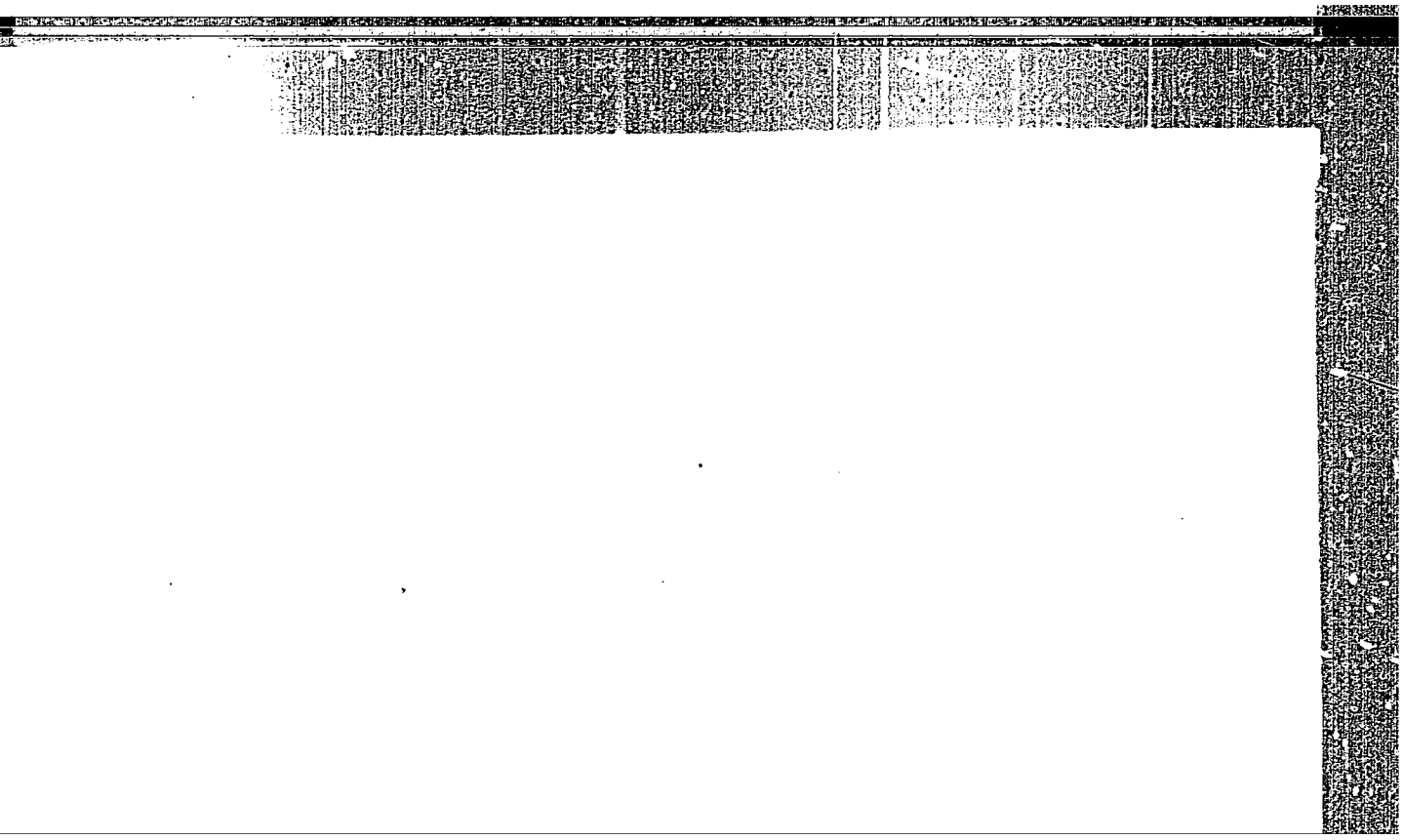

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DUNAYEV, F.N.

Thermomagnetic treatment of ferromagnetic materials. Fiz. met. i metalloved. 16 no.3:484-486 S '63. (MIRA 16:11)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.

Effect of thermomagnetic treatment on internal friction in ferromagnetics. Izv. vys. ucheb. zav.; fiz. no. 2:183-184 '64. (MIRA 17:6)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.; KALININ, V.M.; MAYSINOVICH, V.I.

Anisotropy of the crystal effect of the volume magnetostruction in the spin paramagnetism of iron-silicon alloys. Fiz. met. i metalloved. 18 no.2:318-320 Ag '64.

(MIRA 18:8)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.

Dependence of the magnetostriction of transformer steel on the shape of specimens and magnitude of internal stresses. Fiz.met. i metalloved. 18 no.5:697-702 N '64. (MIRA 18:4)

1. Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.; MARAKULINA, O.S.

Effect of elastic tension on the longitudinal and transverse magnetostriction in E310 transformer steel. Izv. vys. ucheb. zav.; fiz. 8 no.2:162-166 '65. (MIRA 18:7)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.

Effect of the shape of ferromagnetic bodies on their magnetic structure and magnetic properties. Izv. vys. uchet. zav.; fiz. 8 no.3:117-123 '65. (MIRA 18:9)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo

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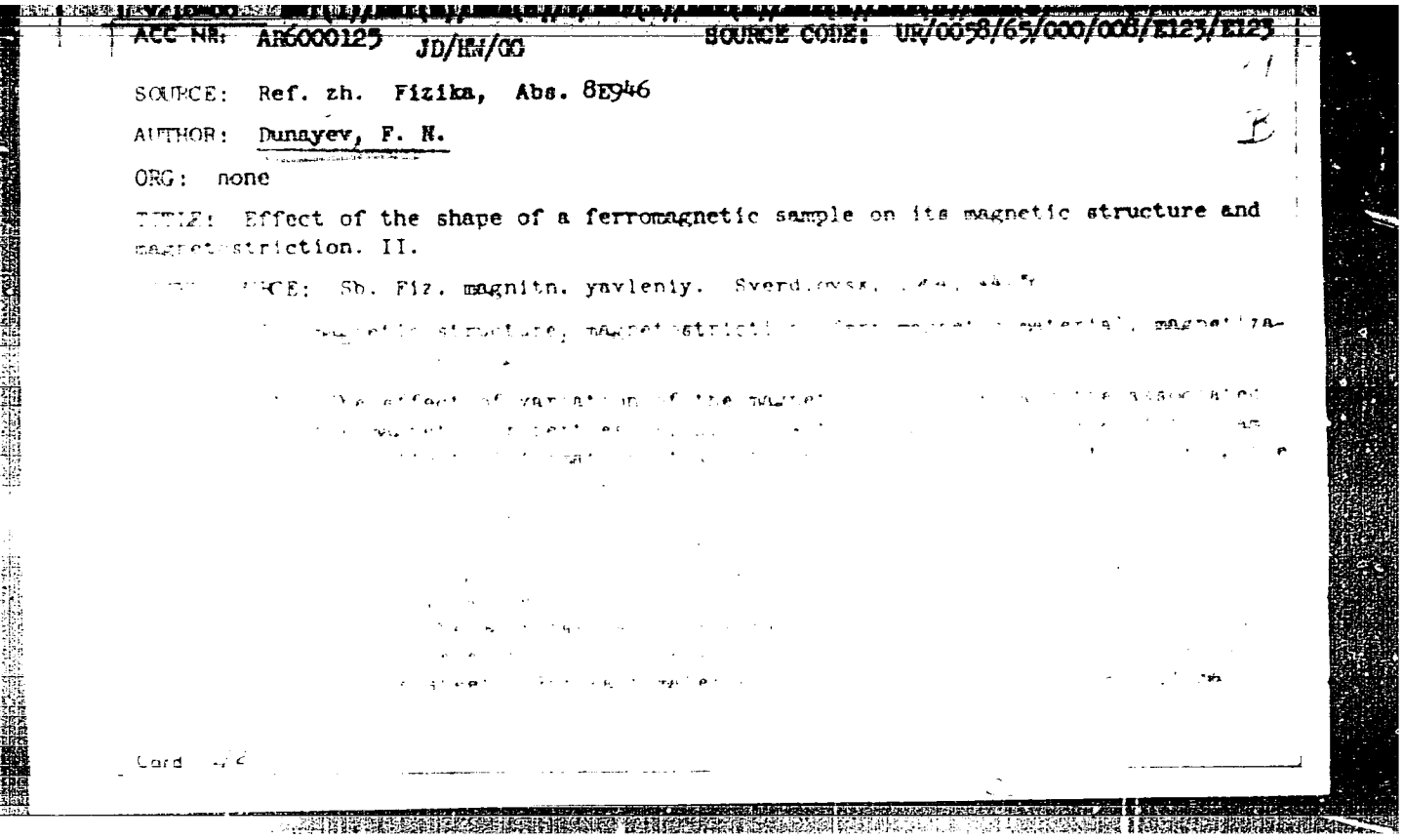

ACC NR: AR6000125 JD/HM/GG SOURCE CODE: UR/0058/65/000/008/E123/E123

SOURCE: Ref. zh. Fizika, Abs. 8E946

AUTHOR: Dunayev, F. N.

ORG: none

TITLE: Effect of the shape of a ferromagnetic sample on its magnetic structure and magnetostriction. II.

SOURCE: Sb. Fiz. magnitn. yavleniy. Sverd.[illegible], [illegible], [illegible]

[illegible] magnetic structure, magnetostriction, [illegible] material, magnetiza-

[illegible] effect of variation of the [illegible]

Card [illegible]

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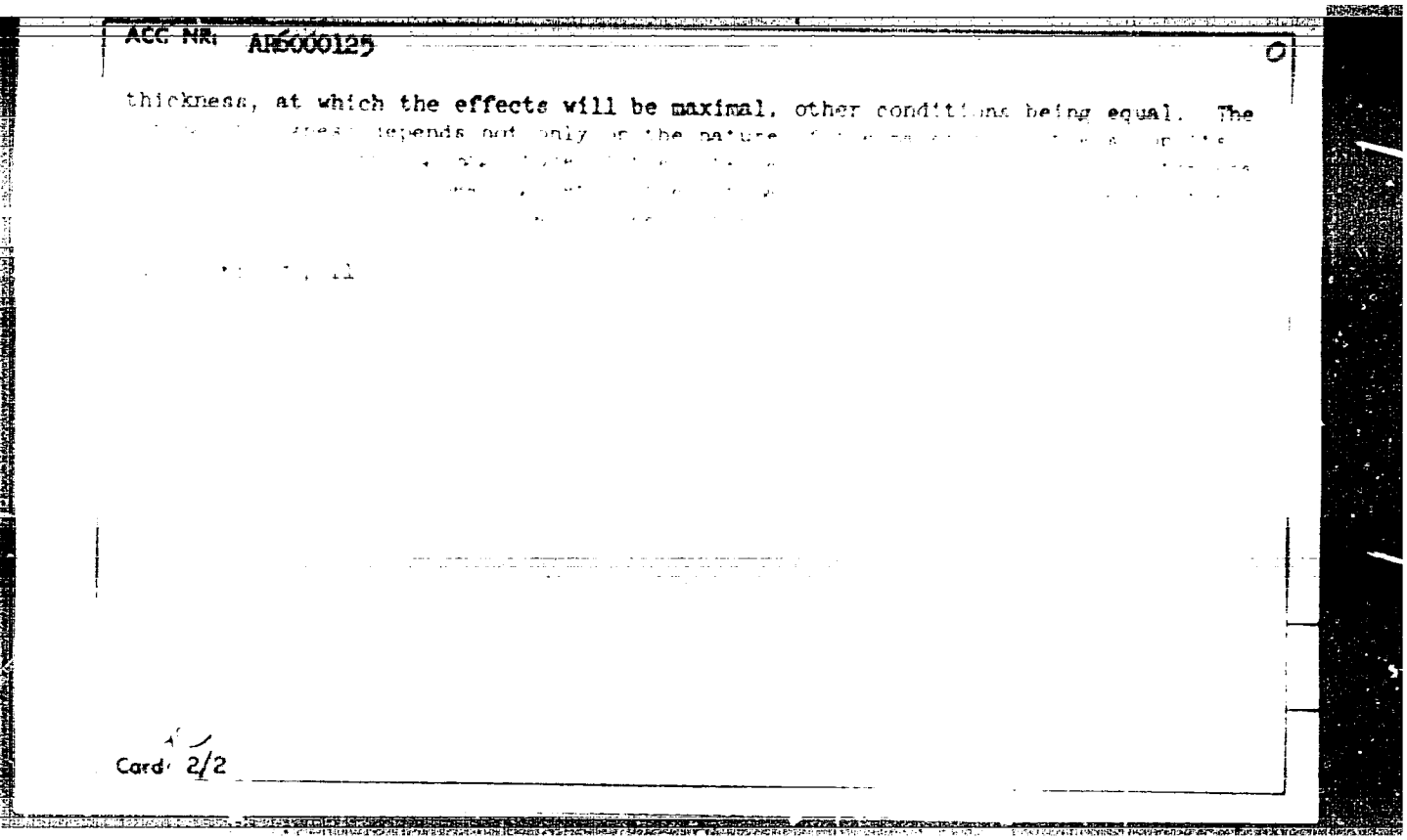

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thickness, at which the effects will be maximal, other conditions being equal. The

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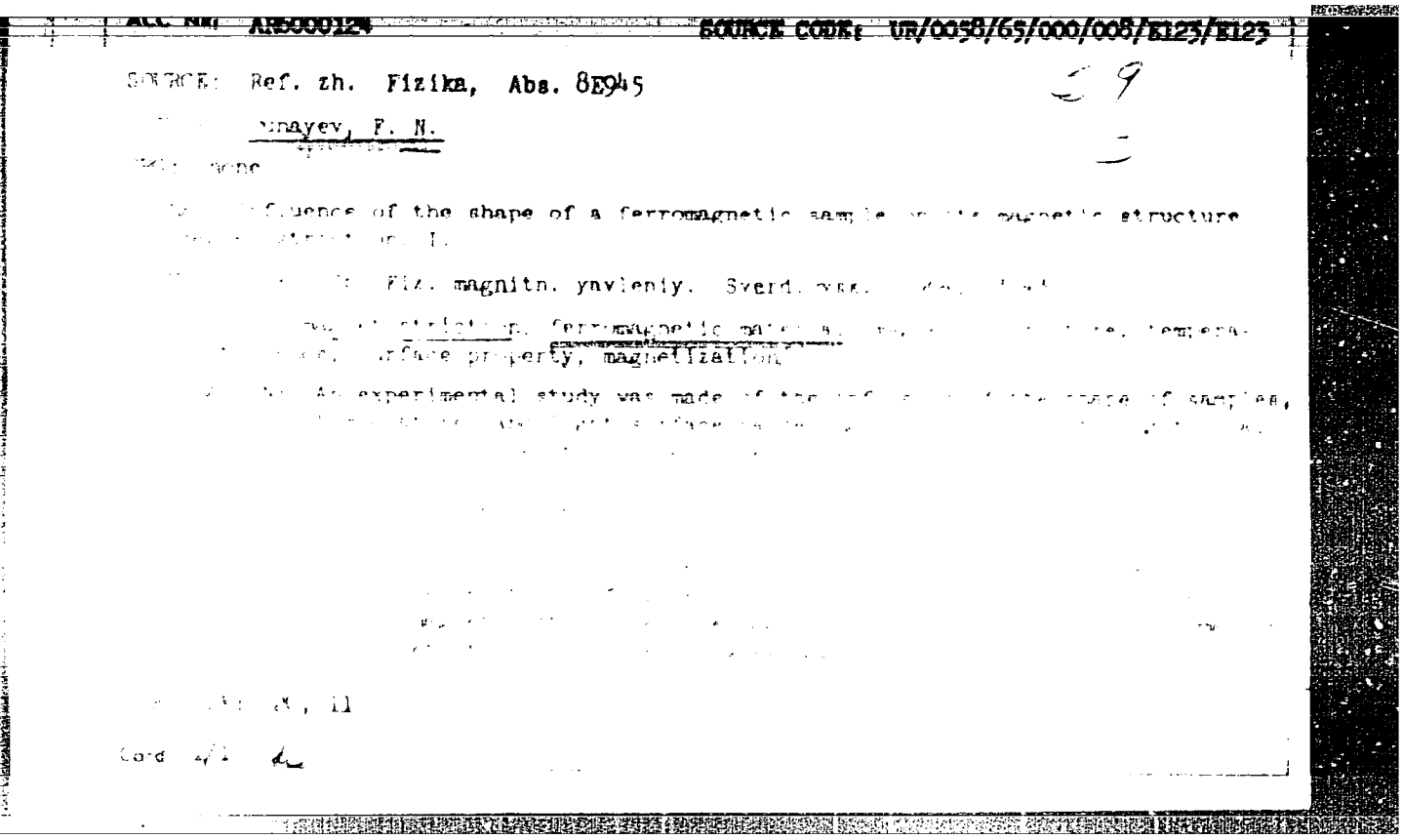

ACC. NR: AR5000124 SOURCE CODE: UR/0058/65/000/008/E123/E123

SOURCE: Ref. zh. Fizika, Abs. 8E945

Vinayev, F. N.

TITLE: none

...fluence of the shape of a ferromagnetic sample ... magnetic structure ... I.

... Fiz. magnitn. yavleniy. Sverd. gos. ...

... ferromagnetic ... temperature ... surface property, magnetization

... An experimental study was made of the ... of samples, ...

SUB CODE: 20, 11

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N., DRUZHININ, V.V.; MALEV, N.S.; PRASOVA, T.I.

Effect of thermomechanical treatment on specific losses, coercive force, and the magnetostriction of E330 steel. Fiz. met. i metalloved. 20 no.3:458-460 S '65. (MIRA 18:11)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo i Verkh-Isetskiy metallurgicheskiy zavod.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, F.N.; KALININ, V.M.; KHYUKOV, I.P.; MAYSINOVICH, V.I.

Magnetization saturation of the Co-Pt alloy. Fiz. met. i metalloved. 20 no.3:460-462 S '65.
(MIRA 18:11)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo i Institut fiziki metallov AN SSSR.

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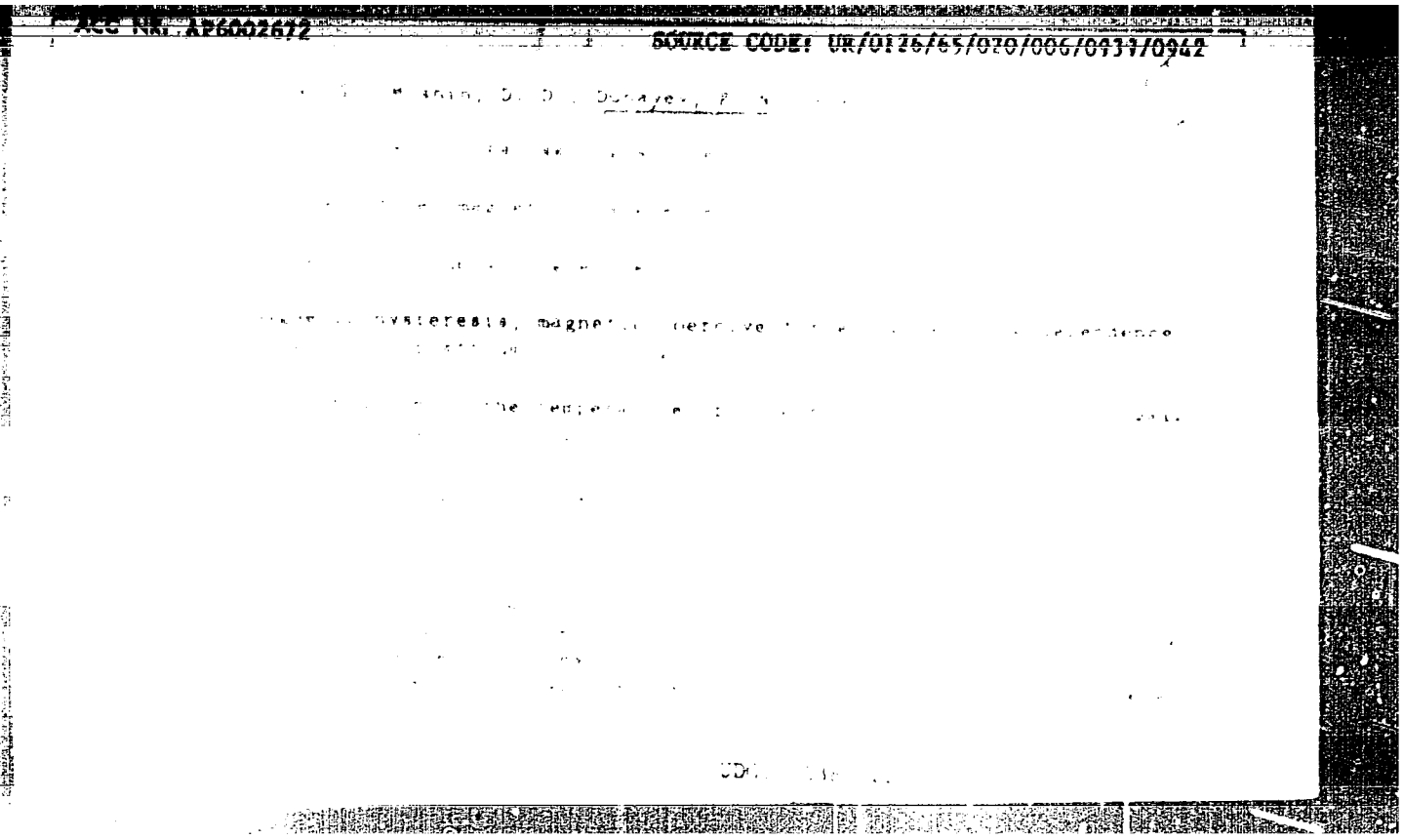
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



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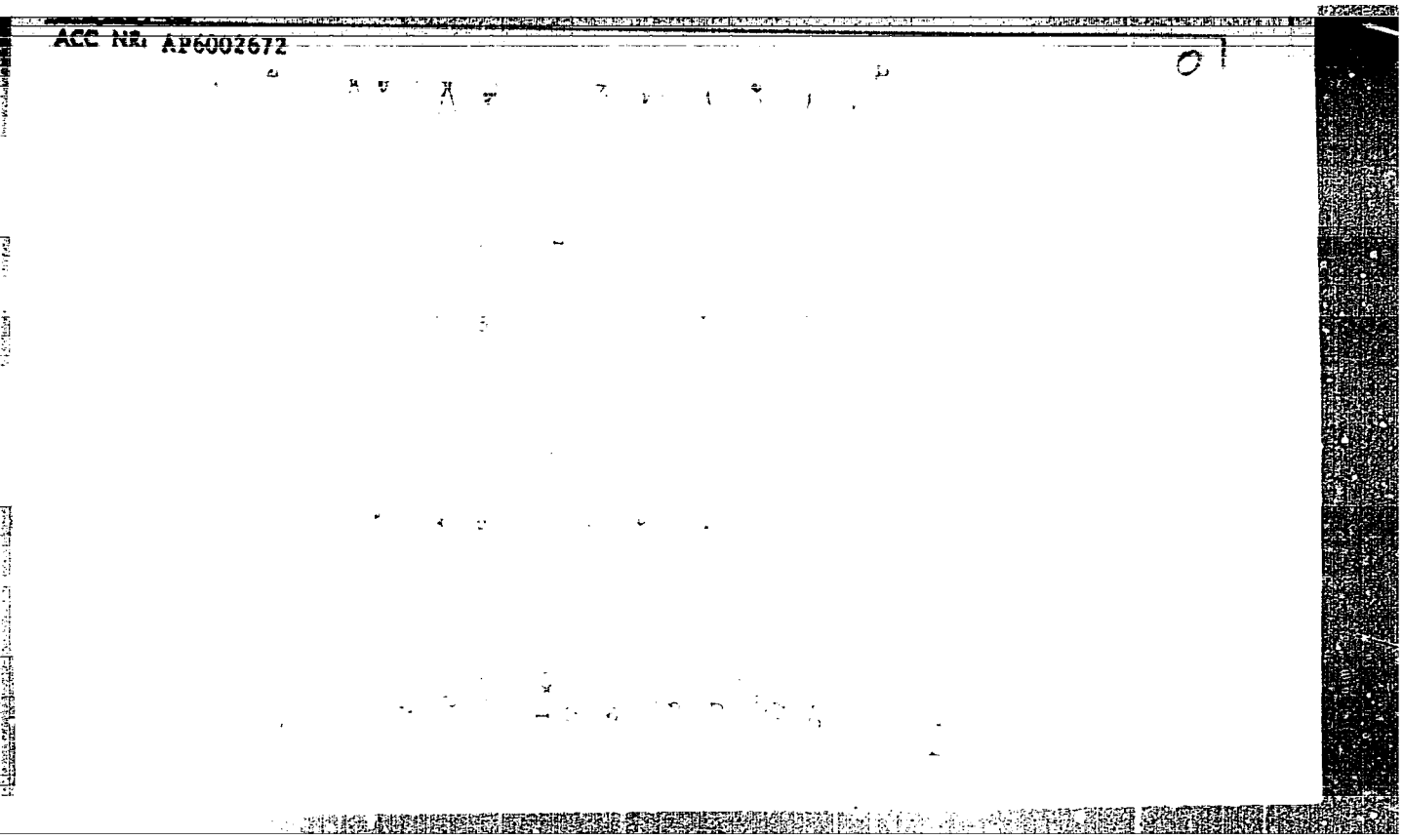

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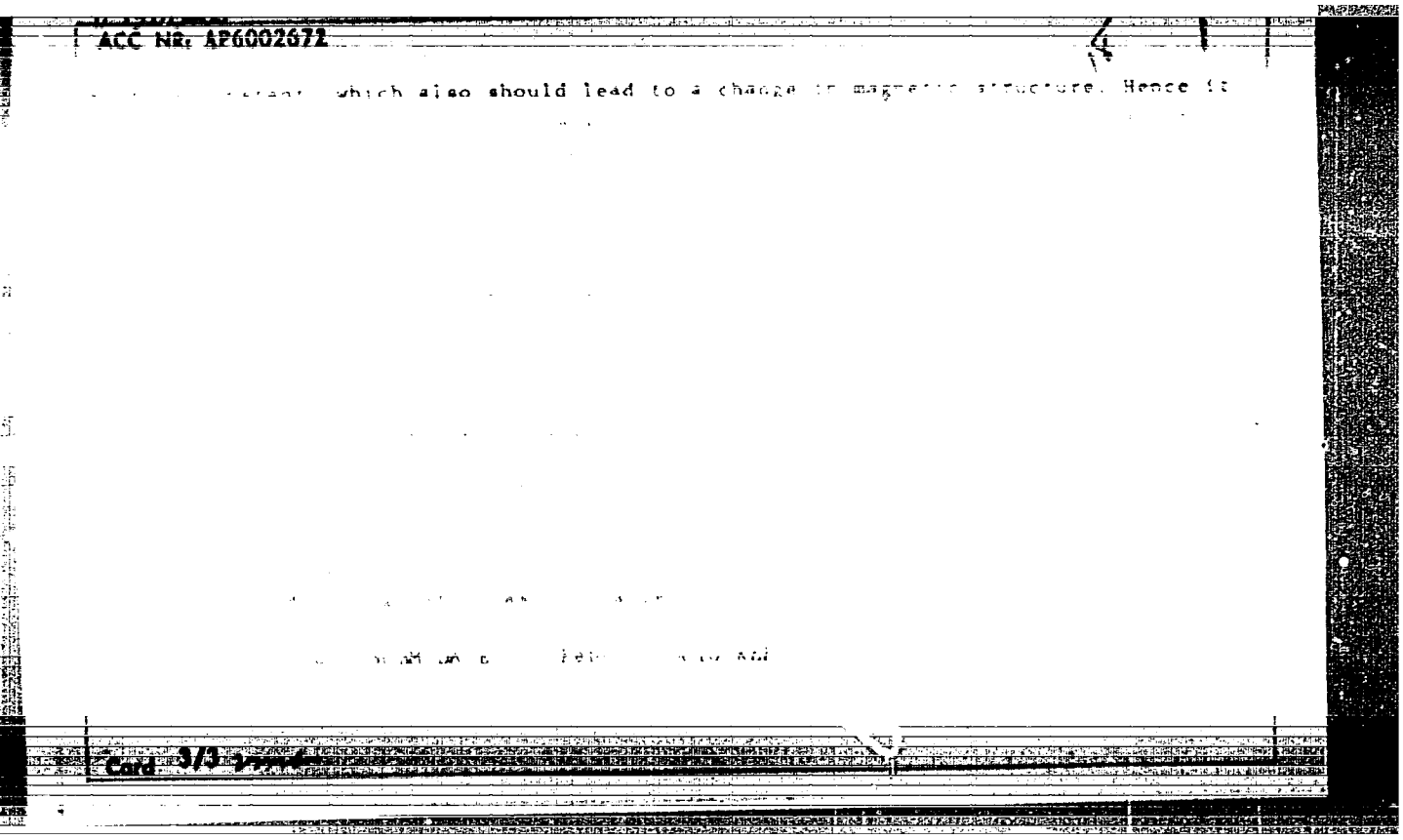

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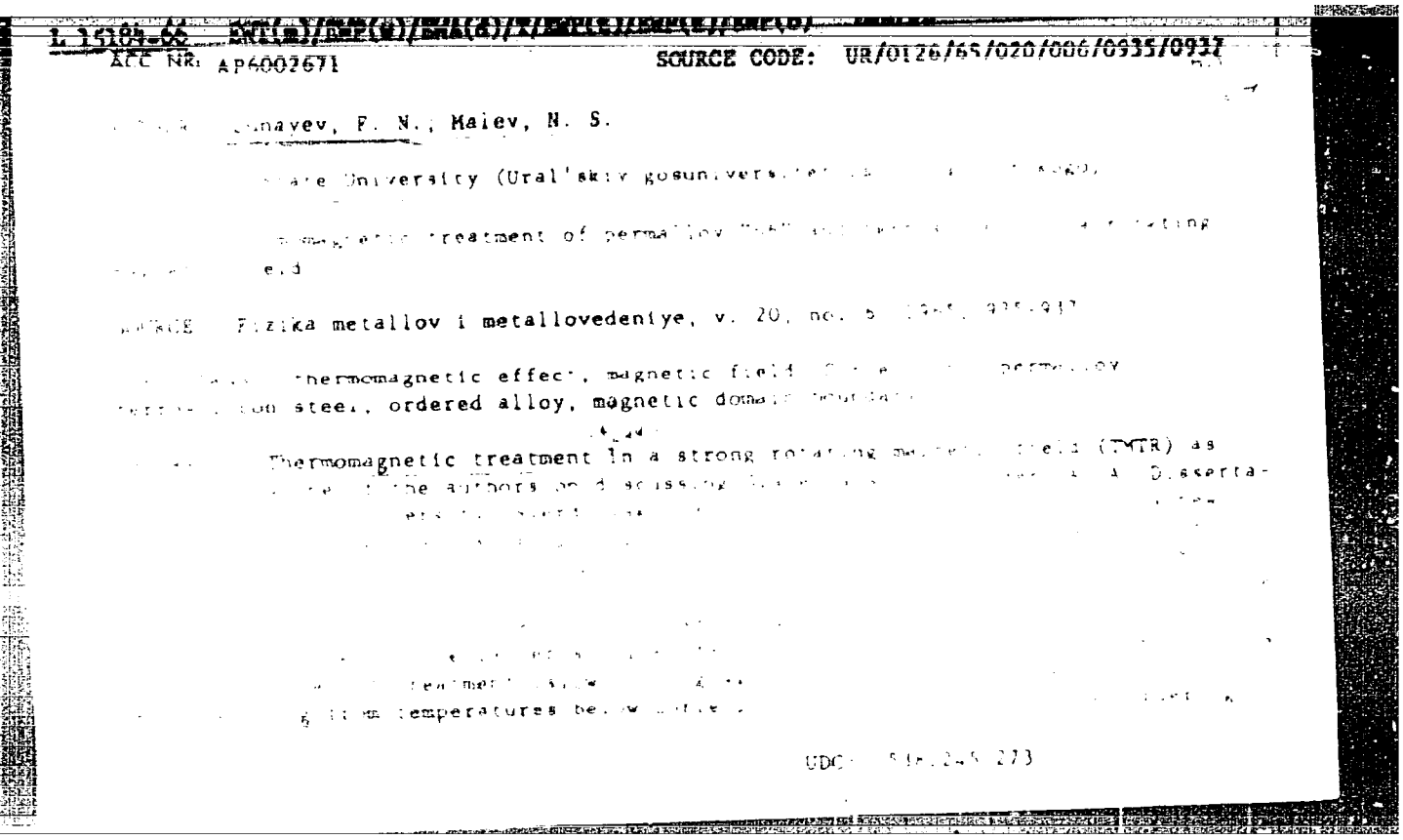

L 15184-66

ACC NR: AP6002671 SOURCE CODE: UR/0126/65/020/006/0935/0937

[illegible]navev, F. N., Malev, N. S.

[illegible]e University (Ural'skiy gosuniversitet [illegible])

[illegible]rmomagnetic treatment of permalloy [illegible] [illegible]ering

[illegible]e]d

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 6 [illegible], 935-937

TOPIC TAGS: thermomagnetic effect, magnetic field [illegible] permalloy [illegible]ion steel, ordered alloy, magnetic domain [illegible]

ABSTRACT: Thermomagnetic treatment in a strong rotating magnetic field (TMTR) as [illegible] the authors and discussing [illegible] Dissertation [illegible]

[illegible] temperatures be[illegible]

UDC: 539.24:537.213

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

temperature, T_{λ}, etc. resulted in either the absence of both order-[illegible] and OS (LOS) or [illegible] ordering and presence of some [illegible]

[illegible] the orientation of the EJSC crystal [illegible] de- [illegible] axis coincided with the [illegible]

[illegible] reversal in any direction will occur [illegible] re-

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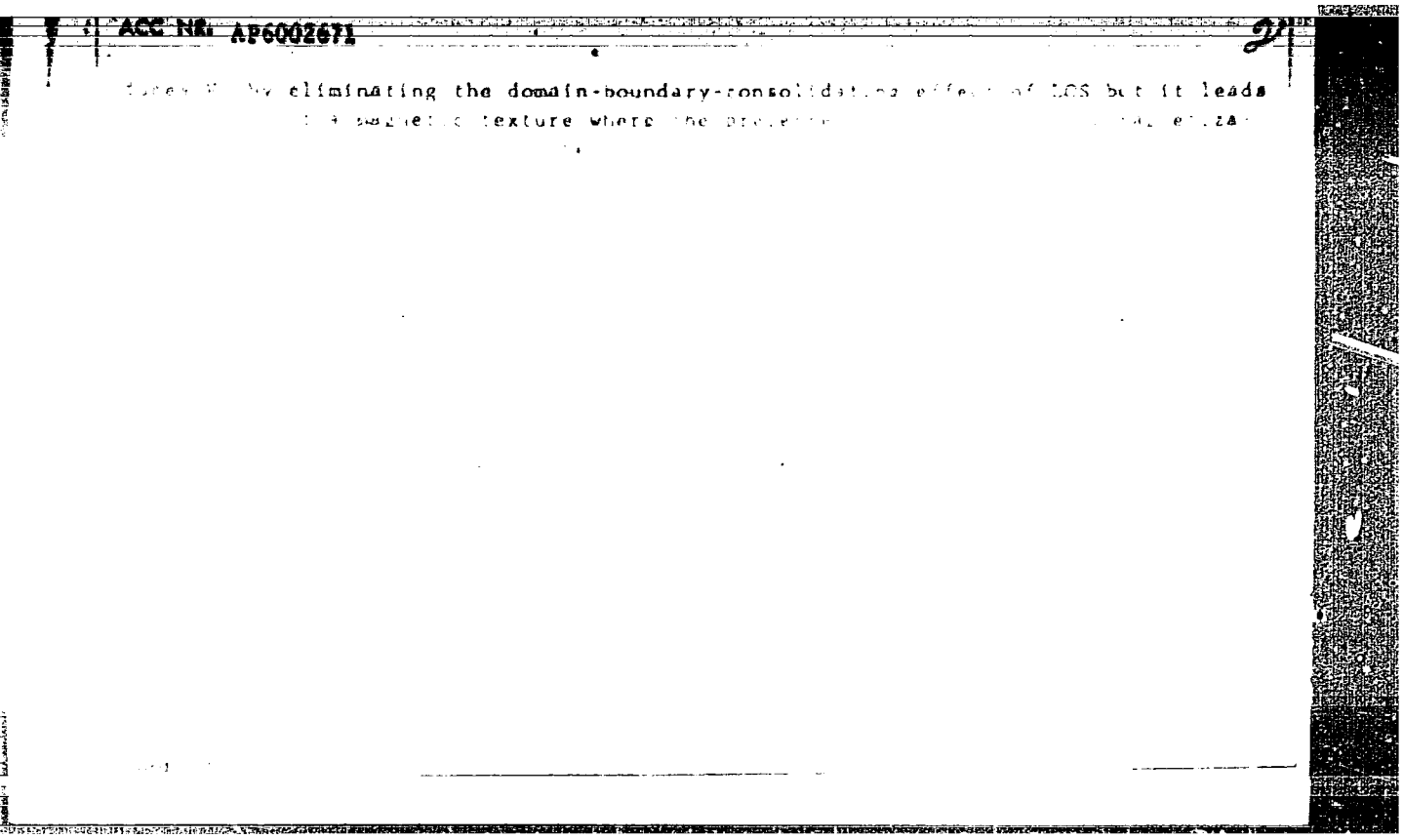
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



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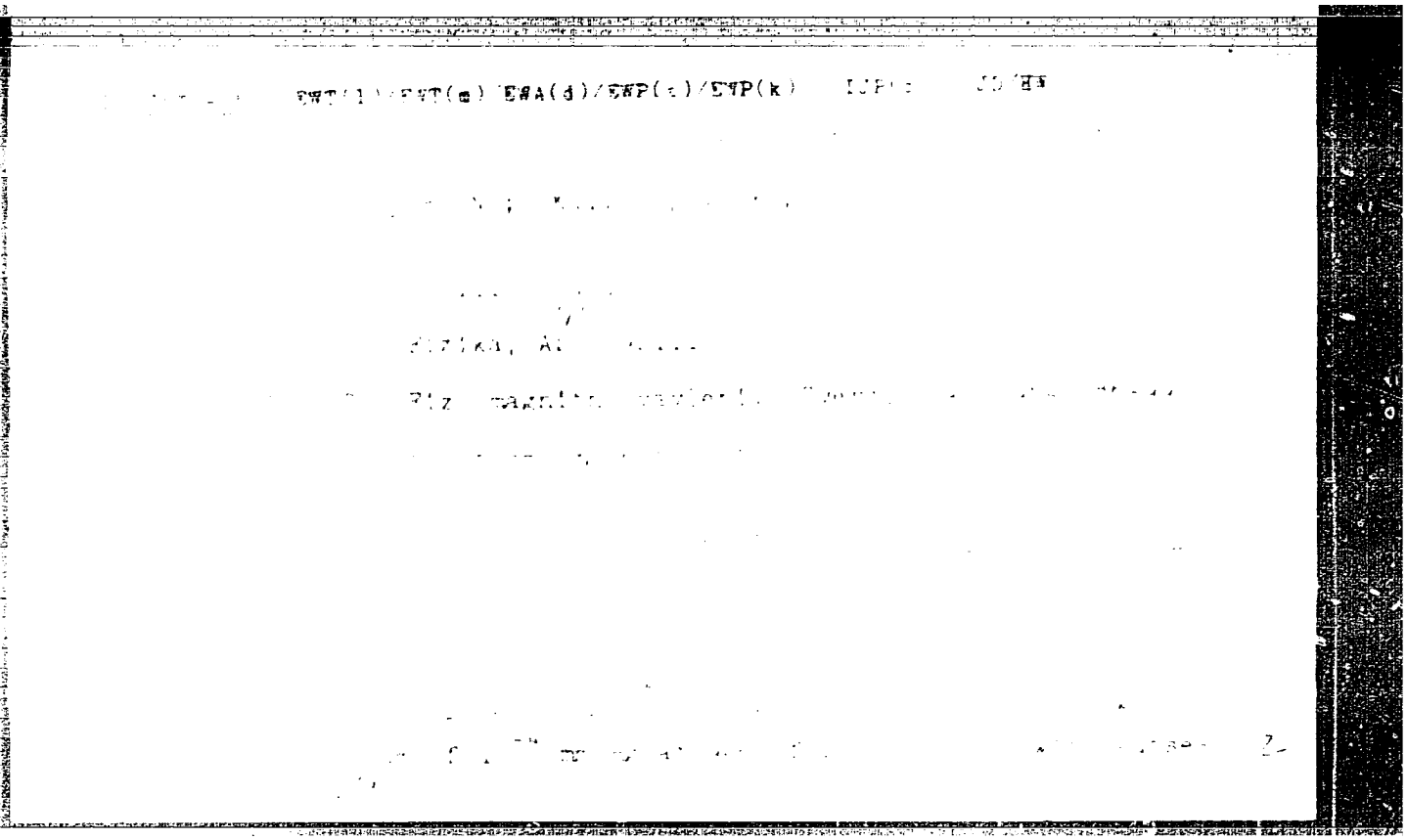
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



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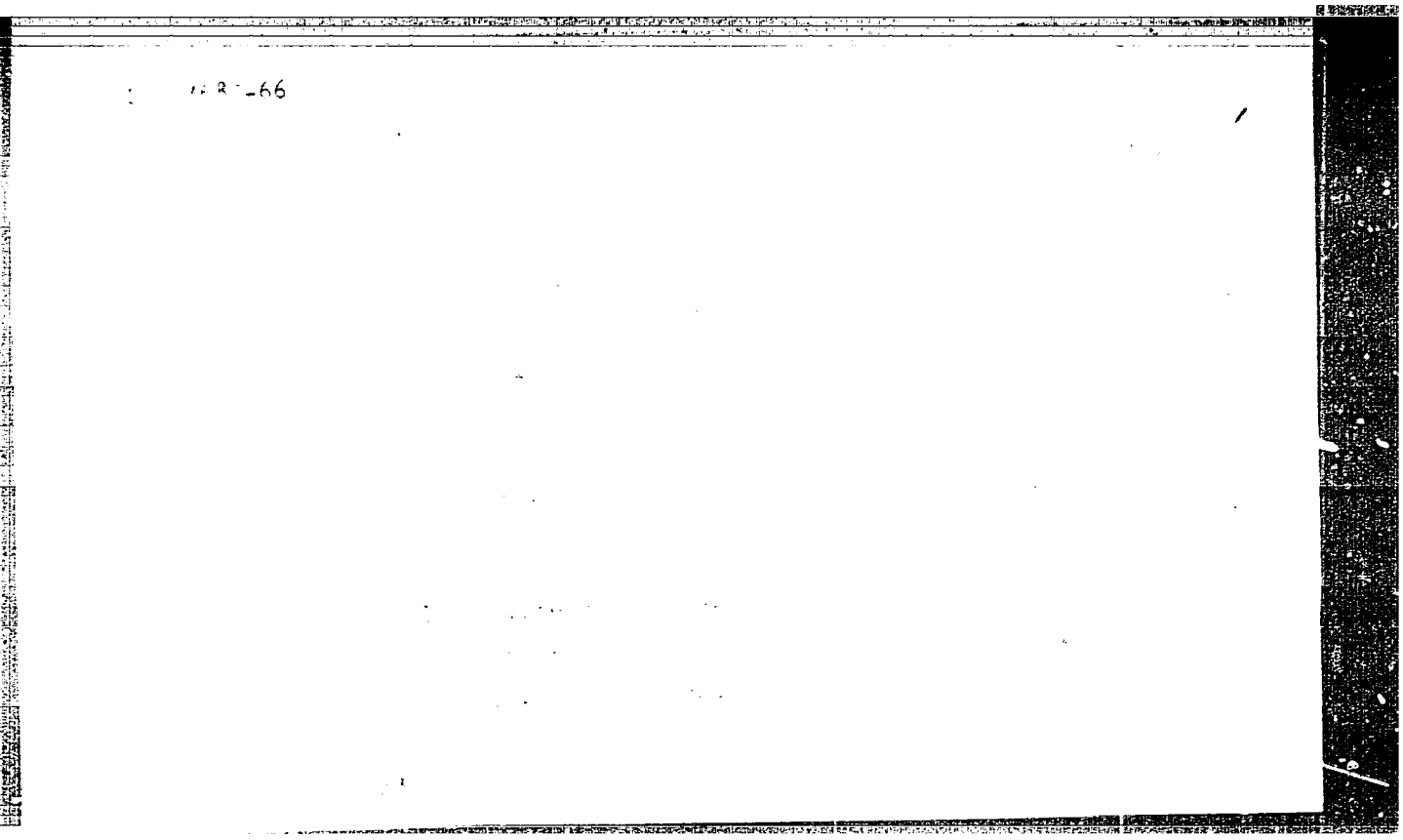
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



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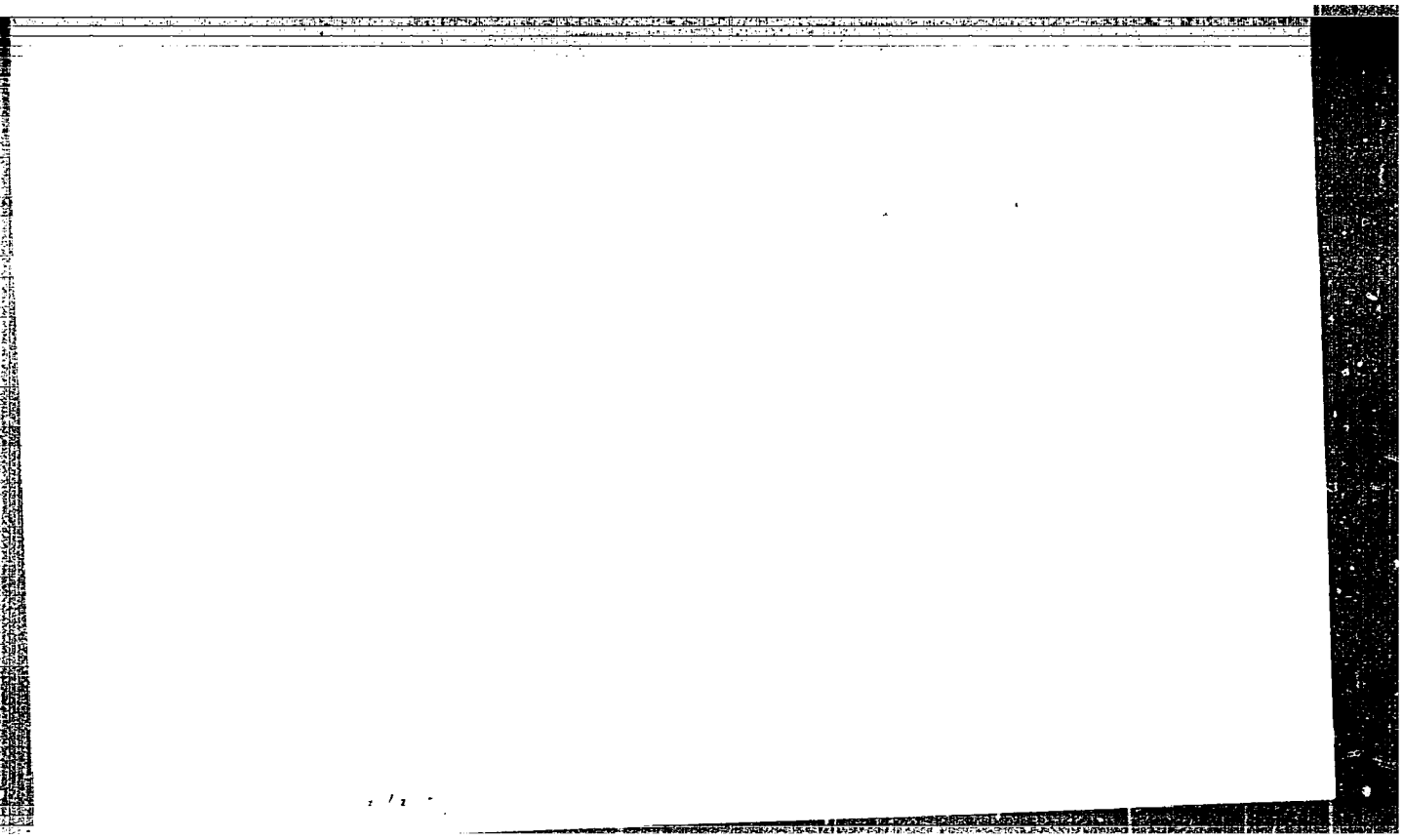
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

L 05009-67 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AR6028434 SOURCE CODE: UR/0137/66/000/005/I028/I028

AUTHOR: Dunayev, F. N.; Malev, N. S.

57
B

TITLE: Thermomagnetic treatment of ferromagnetic materials in a rotating magnetic field

SOURCE: Ref. zh. Metallurgiya, Abs. 5I187

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz. vyp. 1, 1965, 49-59

TOPIC TAGS: thermonagnetic effect, ferromagnetic material, magnetic field, rotating magnetic field

ABSTRACT: A study was made of the effects of heat treatment, thermomagnetic treatment, and thermomagnetic treatment in a rotating magnetic field (2500 oe) on the H_c of polycrystalline samples of the 66-Permalloy, StE43 transformer steel, and monocrystalline samples of StE330 steel. Disk-shaped samples were etched out of a sheet, annealed in vacuum at ~ 10^{-5} mm Hg at 1000C for 2 hours, with subsequent cooling in open air at the rate of 100 degrees per hour. The conditions of heat treatment, thermomagnetic treatment, and thermomagnetic treatment in a rotating magnetic field coincided. The H_c was measured on an astatic magneto-

Card 1/2 UDC: 669.245'1+669.15'782]:538.248

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

meter. The problem was to separate the effects of ordering, controlled ordering, and local controlled ordering. It was found that for the 66-Permalloy samples, the thermomagnetic treatment in a rotating magnetic field significantly reduces the H_c, which became uniform in all directions. Thermomagnetic treatment also reduces H_c; however, it was dominant in the direction of the applied external field. Water quenching, following holding at 520C, somewhat decreases the H_c. The results obtained are interpreted in the light of Neel's theory. The decrease of H_c as a result of thermomagnetic treatment in a rotating magnetic field is attributed by the authors to suppression of local controlled ordering. A change in the magnetic properties as a result of "Permally" treatment is attributed to the suppression of local controlled ordering. In a slowly cooled 66-Permally without a magnetic field locally controlled ordering is more of an obstacle in boundary displacement than any other causes. [Translation of abstract]

SUB CODE: 20/

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

L 26647-66 EWT(m)/EWA(d)/T/EWP(t) IJP(c) JD

ACC NR: AP5025334 SOURCE CODE: UR/0126/65/020/003/0458/0460

AUTHOR: Dunayev, ... N.; Druzhinin, V. V.; Malev, N. S.; Prasova, T. Y.

ORG: Ural State University im. A. M. Gor'kiy (Ural'skiy ... universitet) Verkh-

...fizika metallov i metallovedeniye, v. 20, ... 458-460

...magnetostriction, steel, metal heat treatment ... plastic deformation, E330 steel

coercive force, and magnetostriction of cold-rolled steel E330 has been studied, and the causes contributing to these changes have been investigated. The specific ... measured by means of a ...

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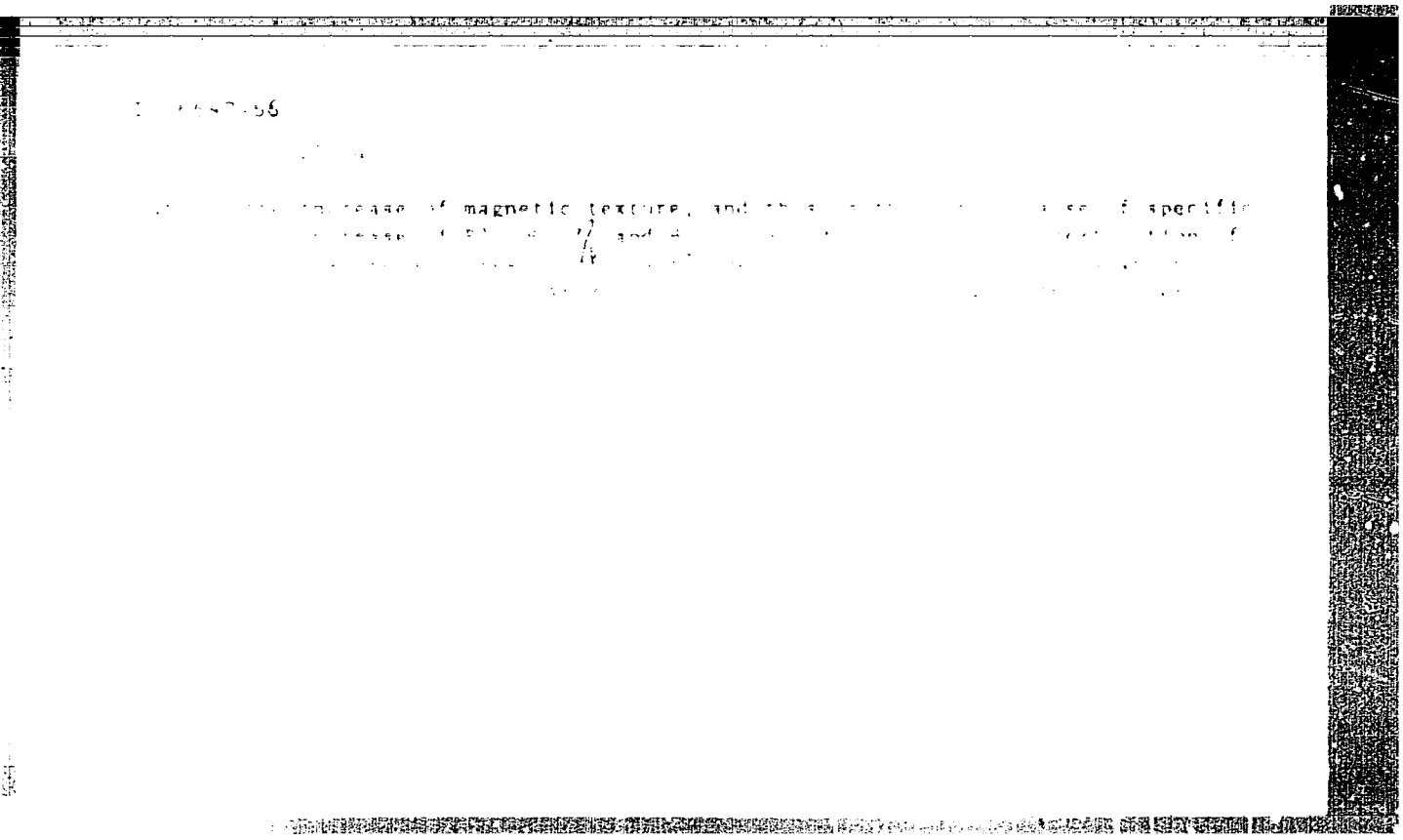
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

EWT(1)/EWA(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/JW

ACC NR: AT6023414 SOURCE CODE: UR/0139/66/000/003/0071/0073

AUTHOR: Dunayev, F. N. 52

ORG: Ural State University im. A. M. Gor'kiy (Ural'skiy gosuniversitet)

TITLE: Influence of directed ordering on the magnetic form texture

SOURCE: IVUZ. Fizika, no. 3, 1966, 71-73

TOPIC TAGS: magnetic anisotropy, ferromagnetic material, magnetic property, internal stress/ E330 silicon steel

ABSTRACT: This is a continuation of earlier work (FMM v. 18, 1697, 1964) where it was shown that the magnetic texture of flat samples of polyaxial ferromagnets in the demagnetized state is determined to a considerable degree by the ratio of the energy of the shape anisotropy to the anisotropy of the magnetoelastic energy of the internal stresses. The present paper considers further the influence of this ratio on the magnetic texture and different magnetic properties of ferromagnets, with particular attention to the influence of the magnetic anisotropy induced by local directed ordering on the magnetic texture and the dependence of the magnetic anisotropy on the shape of the sample and the magnitude of the internal stresses. It is shown that local ordering gives rise to an additional anisotropy energy which must be taken into account in the calculations, and estimates for its magnitude are given. Using the results of experiments on iron-silicon steel (E330) it is concluded that since this steel shows a strongly pronounced magnetic form texture, evidencing that a

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L 09358-67

ACC NR: AP6023414 O

directed ordering does take place in this material, the magnetic anisotropy induced by it is small. The magnetic form texture will be small in materials in which the directed ordering plays a major role. Orig. art. has: 14 formulas.

SUB CODE: 20/ SUBM DATE: 28Dec64/ ORIG REF: 003/ OTH REF: 002

Card 2/2 LP

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

L 46286-66 EWT(m)/EWP(t)/ETI IJP(c) JD/HW/JG SOURCE CODE: UR/0126/65/020/003/0460/0462 52 51

ACC NR: AP5025335 B

AUTHOR: Dunayev, F. N.; Kalinin, V. M.; Kryukov, I. P.; Maysinovich, V. I.

ORG: Ural State University im. A. M. Gor'kiy (Ural'skiy gosuniversitet); Institute of Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: The magnetic saturation intensity of Co-Pt alloy

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 460-462

TOPIC TAGS: cobalt alloy, platinum alloy, magnetic saturation, TEMPERATURE DEPENDENCE

ABSTRACT: The thermal dependence of the specific magnetic saturation intensity of a Co-Pt alloy of nearly equiatomic composition was determined from liquid nitrogen temperature to 700K, in order to study the nature of the high coercivity of such magnets. Spherical samples of 3.8 mm diam were prepared. Their specific magnetic saturation intensity was measured after 30 min heating at 1000C, cooling at a rate of 1.3C/sec, and annealing 3, 6, 9, or 13 hr at 600C using fields up to 80kOe for magnetization. The specific magnetic saturation intensity increased with field strength and decreased with annealing time and with the temperature at magnetization, reaching a maximum of 43.5 G·cm3·g-1 for tempered and not annealed samples. The results indicate that magnetization of the tetragonal and well defined phase, formed during

UDC: 538.114:245

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

ACC NR: AR6029501 SOURCE CODE: UR/0137/66/000/006/I026/I026

AUTHOR: Mishin, D. D.; Dunayev, F. N.; Shmel'kov, A. P.; Rodnevskiy, L. A.; Mityushev, V. A.; Kuranov, A. A.; Yevdokimova, L. A.

TITLE: Effect of plastic deformation and heat treatment on the magnetic anisotropy of a cobalt-platinum alloy

SOURCE: Ref. zh. Metallurgiya, Abs. 6I176

REF SOURCE: Uch. zap. Ural'skogo un-ta. Ser. fiz., vyp. 1, 1965, 60-63

TOPIC TAGS: plastic deformation, magnetic anisotropy, cobalt containing alloy, platinum containing alloy, ordered alloy

TRANSLATION: A study was made of the effect of plastic deformation and heat treatment on the magnetic anisotropy of a Co-Pt alloy, having a nearly equiatomic composition. From the curves of mechanical moments presented for samples with different deformations, it followed that with an increase in the amount of deformation a sharper definition of magnetic biaxiality occurred, and an asymmetry of the rotational moment diagrams was found relative to the axis of the angles. After an optimum heat treatment (heating to 1000°C and holding 3 hr and ordering at 600°C for 1.5 hr), the magnetic anisotropy almost disappeared. However, as evident in the described demagnetization and magnetic energy diagrams, magnetic anisotropy was present after the ordering of cold rolled samples. (From *RZh. Fiz.*).

SUB CODE: 11

Card 1/1 UDC: 669.255'231:538.22

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

L 46286-66 EWT(m)/EWP(t)/ETI IJP(c) JD/HW/JG

ACC NR: AP5025335 SOURCE CODE: UR/0126/65/020/003/0460/0462

AUTHOR: Dunayev, F. N.; Kalinin, V. M.; Kryukov, I. P.; Maysinovich, V. I.

ORG: Ural State University im. A. M. Gor'kiy (Ural'skiy gosuniversitet); Institute of Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: The magnetic saturation intensity of Co-Pt alloy

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 460-462

TOPIC TAGS: cobalt alloy, platinum alloy, magnetic saturation, TEMPERATURE DEPENDENCE

ABSTRACT: The thermal dependence of the specific magnetic saturation intensity of a Co-Pt alloy of nearly equiatomic composition was determined from liquid nitrogen temperature to 700K, in order to study the nature of the high coercivity of such magnets. Spherical samples of 3.8 mm diam were prepared. Their specific magnetic saturation intensity was measured after 30 min heating at 1000C, cooling at a rate of 1.3C/sec, and annealing 3, 6, 9, or 13 hr at 600C using fields up to 80kOe for magnetization. The specific magnetic saturation intensity increased with field strength and decreased with annealing time and with the temperature at magnetization, reaching a maximum of 43.5 $G \cdot cm^3 \cdot g^{-1}$ for tempered and not annealed samples. The results indicate that magnetization of the tetragonal and well defined phase, formed during

Card 1/2 UDC: 538.114:245

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

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L 46286-66
ACC NR: AP6025288

the annealing process, is 35—40% lower than that of the cubic disordered phase generated at 850C and higher temperatures. The authors thank R. Z. Levitin for making available information on the method of measuring magnetization in pulse fields before its publication. Orig. art. has: 3 figures.

SUB CODE: 11,20/ SUBM DATE: 21Aug64 / ORIG REF: 004/ OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

ORLOV, D., TATARINOV, V., i DUMAYEV, I.

Training students in automobile maintenance. Avt. transp. 36 no. 6:41-42 Je '58. (MIRA 11:7)

1. Ural'skiy uchebnyy kombinat.
(Automobiles--Maintenance and repair)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

MIKHAYLOVSKIY, V., general-mayor meditsinskoy sluzhby; DUNAYEV, I., polkovnik meditsinskoy sluzhby

Protect and improve the health of troops. Tyl i snab. Sov. Voor. Sil 21 no.4:51-55 Ap '61. (MIRA 14:7)
(Military hygiene)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, I.L., polkovnik med.sluzhby

Some problems of military hygiene. Voen.-med.zhur. no.10:67-72 O '58. (MIRA 12:12)

(MEDICINE, MILITARY AND NAVAL
hyg. problems of military labor (Rus))

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

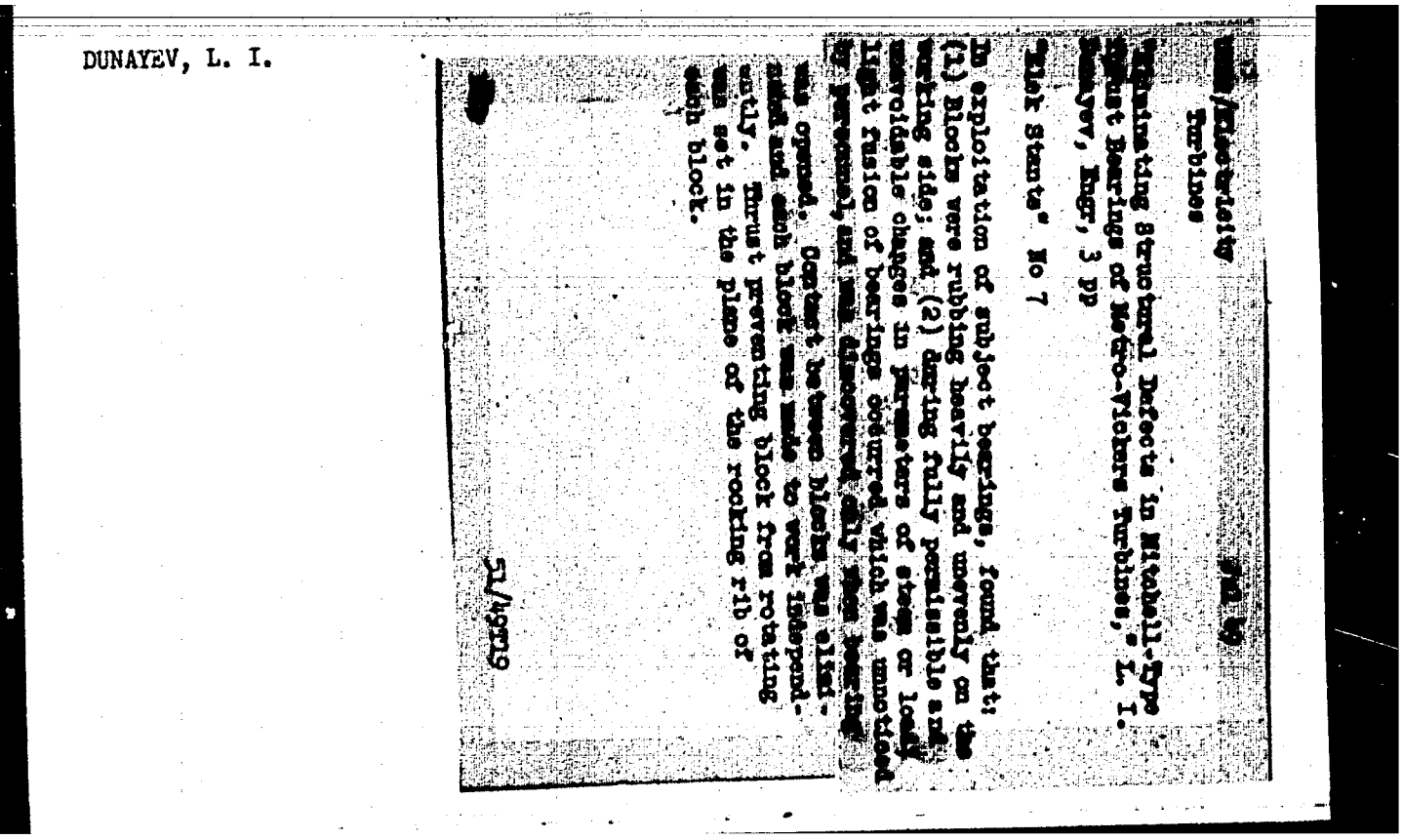
DUNAYEV, I.V., kapitan 2-go ranga v otstavke; IGNAT'YEV, N.N., inzhener-kapitan 3-go ranga

Water-emptying equipment. Mor. sbor. 48 no.6:92 Je '65.
(MIRA 18:6)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, L. I.



[illegible]
Turbines

[illegible]ting Structural Defects in Kitchell-Type [illegible]
[illegible]ment Bearings of Metro-Vickers Turbines," L. I. Dunayev, Engr, 3 pp

"Tek Stanta" No 7

Exploitation of subject bearings, found that: (1) Blocks were rubbing heavily and unevenly on the [illegible]ering ridge; and (2) during fully permissible and [illegible]avoidable changes in parameters of steam or load [illegible]ight fusion of bearings occurred which was smoothed [illegible] personnel, and was discovered only when bearing [illegible] opened. Damage to these blocks was classified [illegible]ight and each block was made to work independently. Thrust preventing block from rotating was set in the plane of the rocking rib of each block.

51/49T9

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, L.I.

DUNAYEV, L.I., insh.

About relative elongations in steam-turbine rotors. Teploenergetika 4 no.12:89-91 D '57. (MLRA 10:11)

(Steam turbines)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, M. N.

KARPOVA, N.N., insh.; DUNAYEV, M.N., insh.

Use of hydrocyclones for the flotation of coal fines. Sbor. inform. po obog. i brik. ugl. no.1:40-44 '57. (MIRA 11:4)
(Separators (Machines)) (Flotation)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

BAZHENOV, I.I.,; GRIDIN, A.D.; DUNAYEV, M.N.; LOKHANIN, K.A.; SEMENOV, A.P.; NURMUKHAMEDOVA, V.F., red. izd-va.; IL'INSKAYA, G.M., tekhn. red.; ALADOVA, Ye.I., tekhn. red.

[Coal industry in Czechoslovakia] Ugol'naia promyshlennost' Chekhoslovakii. Moskva, Ugletekhizdat, 1958. 263 p. (MIRA 11:12)
(Czechoslovakia--Coal mines and mining)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUMAYEV, M.N., insh.

Clarification of recirculation wash waters in hydrocyclones.
Nauch.trudy po obog.i brik.ugl. no.1:178-195 '58.
(MIRA 12:10)

(Coal preparation plants--Water supply)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

KUZNETSOV, G.N., insh.; DUMANOV, M.N., insh.

Coal preparation in the Hungarian People's Republic. Obog. i brik.ugl. no.10:56-65 '59. (MIRA 13:9)
(Hungary--Coal preparation)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, M.N., inzh.; ORDANSKAYA, B.S., inzh.

Introducing hydro-cyclones in coal preparation plants. Obog.i brik. ugl. no.11:3-6 '59. (MIRA 13:6)
(Coal preparation) (Separators (Machines))

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, M.N., inzh.; MELIK-STEPANOVA, A.G., inzh.; ORDANSKAYA, B.S., inzh.

Using a hydrocyclone battery in the pulp-water system of coal preparation plants. Obog.i brik.ugl. no.14:21-35 '60.

(MIRA 14:5)

(Coal preparation) (Separators (Machines))

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, M.N., insh.; MALOFEYEVA, K.T., insh.

Use of hydrocyclones for the preparation of fine size coals.
Obog.i brik.ugl. no.15:3-21 '60. (MIRA 14:12)
(Coal preparation)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, M.N.; TURCHENKO, V.K.; GREBENSHCHIKOV, V.P.; MELIK-STEPANOVA, A.G.; OL'FERT, A.I., otv. red; PRONINA, N.D., tekhn. red.

[Preparation, dewatering, and drying of fine coal; survey of foreign material]Obogashchenie, obezvozhivanie i sushka melkogo uglia; obzor zarubezhnykh materialov. Moskva, TSentr. in-t tekhn. informatsii, 1962. 77 p. (MIRA 16:4)
(Coal preparation)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

AKOPOV, M. G., kand. tekhn. nauk; DUNAYEV, M. N., insh.; KLASSEN, V. I., prof., doktor tekhn. nauk; KULIK, P. P., insh.; LITOVKO, V. I., kand. tekhn. nauk; MALOFEYEVA, K. T., insh.

Industrial testing of the preparation of coal pulp with hydrocyclones in a water medium. Obog. i brik. ugl. no.24: 3-10 '62. (MIRA 15:10)

(Coal preparation) (Separators(Machines))

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

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DUNAYEV, Maksim Nikitovich, insh.; TURCHENKO, Vasiliy Kuz'mich, insh.; MELIK-STEPANOVA, Alla Georgiyevna, insh.; GREBENSHCHIKOV, Vladimir Petrovich, insh.; DREMAYLO, P.G., otv.red.; OL'FERT, A.I., red.izd-va; BOLDYREVA, Z.A., tekhn. red.

[Preparation of unclassified coals]Obogashchenie neklassifitsirovannykh uglei. [By]Dunaev, M.N. i dr. Moskva, Gosgortekhizdat, 1963. 181 p. (MIRA 16:3)
(Coal preparation)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N., inzh.; ORLOV, I., inzh.

Specialization of ports on the Amur River. Rech. transp. 24 no.8: 50 '65. (MIRA 18:9)

1. Zabaykal'skaya zheleznaya doroga.

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DUNAYEV, N.; ORLOV, I.

Mutual aid is the basis of success. Rech.trnasp. 23 no.11:51 N '64. (MIRA 18:3)

1. Zamestitel' nachal'nika otdela dvizheniya i gruzovoy raboty Svobodnenskogo otdeleniya Zabaykal'skoy zheleznoy dorogi (for Dunayev). 2. Starshiy inzh. otdela dvizheniya i gruzovoy raboty Svobodnenskogo otdeleniya Zabaykal'skoy zheleznoy dorogi (for Orlov).

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DUNAYEV, N.B.

Kinematic and power dependences in variations developed by the "Office for the Design of Chemical Apparatus." Trudy MIKHM 24:205-222 '62. (MIRA 18:3)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I.

Using credit for the introduction of automatic equipment and communication apparatus. Avtom., telem. i sviaz' 8 no.7: 35-36 Jl '64. (MIRA 17:12)

1. Zamestitel' nachal'nika Svobodnenskogo otdeleniya Zabaykal'skoy dorogi.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

MIGAL', S.P., kand.ekon.nauk; ABRAMOVA, A.P., kand.ekon.nauk (Dnepropetrovsk); GRISHEL', Ye.P., insh.; DUNAYEV, N.I., insh. (stantsiya Kuybyshevka-Vostochnaya)

How to improve the system of economic accountability in classification yards. Zhel.dor.transp. 40 no.4:38-41 Ap '58. (MIRA 13:4)

(Railroads--Accounts, bookkeeping, etc.)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUMAYEV, N.I., insh.; KAMENNIROV, D.D., insh.; KOCHERGIN, V.N., insh.; ORKHOV, V.K., insh.; GRISHKL', Ye.P., insh.(Belogorsk)

"Traffic organization in railroad transportation" by F.P. Kochnev, Reviewed by N.I.Dumaev and others. Zhel.dor.transp. 41 no.12:91 D '59. (MIRA 13:4)
(Railroads--Traffic) (Kochnev, F.P.)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I., inzh. (g.Svobodnyy); KANTEMIROV, D.D., inzh. (g.Svobodnyy); FEDORINA, F.T., inzh. (g.Svobodnyy); KOCHERGIN, V.N., inzh. (Svobodnyy); PEVZNER, S.L., inzh. (g.Svobodnyy)

"Organization of the work in a railroad section" by IU.I.Zelenskii, P.S.Tikhomirov. Reviewed by N.I.Dunaev and others. Zhel.dor. transp. 43 no.11:94-96 N '61. (MIRA 14:11)
(Railroads--Management)
(Zelenskii, IU.I.)
(Tikhomirov, P.S.)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I.; ORLOV, I.Ye.

Railroad sections should be given a greater role in freight transportation planning. Zhel.dor.transp. 44 no.6:50-51 Je '62.

1. Zamestitel' nachal'nika otdela dvizheniya i gruzovoy raboty Svobodnenskogo otdeleniya Zabaykal'skoy dorogi (for Dunayev).
2. Starshiy inzh. otdela dvizheniya i gruzovoy raboty Svobodnenskogo otdeleniya Zabaykal'skoy dorogi (for Orlov).
(Railroads—Management)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I.

Efficiency of relay interlocking systems at the railroad station of Zavitaya. Avtom., telem. i sviaz' 7 no.2:40-41 '63. (MIRA 16:3)

1. Zamestitel' nachal'nika otdela dvizheniya Svobodnenskogo otdeleniya Zabaykal'skoy dorogi.
(Zavitaya—Railroads—Signaling)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.; ORLOV, I.; PODOROZHNYY, K.

Both station and harbor work in a new way. Rech. transp. 22 no.11:24-25 N '63. (MIRA 16:12)

1. Zamestitel' nachal'nika otdela dvizheniya Svobodnenskogo otdeleniya Zabaykal'skoy zheleznoy dorogi (for Dunayev). 2. Starshiy inzh. otdela dvizheniya Svobodnenskogo otdeleniya Zabaykal'skoy zheleznoy dorogi (for Orlov). 3. Nachal'nik Blagoveshchenskogo rechnogo porta (for Podorozhnyy).

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I.

Effectiveness of semiautomatic block systems on single-track lines. Avtom., telem. i sviaz' 8 no.11:42-43 N '64.

(MIRA 17:12)

1. Zamestitel' nachal'nika otdela dvizheniya otdeleniya Zabaykal'skoy dorogi.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I.

Effectiveness of electric interlocking systems in district stations. Avtom., telem. i sviaz' 9 no.7:30-31 Jl '65. (MIRA 18:8)

1. Zamestitel' nachal'nika otdela dvizheniya Svobodnenskogo otdeleniya Zabaykal'skoy dorogi.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.I. (g.Svobodnyy)

Accelerated processing of coal freight. Zhel.dor.transp. 47 no.10:31-32 O '65. (MIRA 18:10)

1. Zamestitel' nachal'nika otdela dvizheniya Svobodnenskogo otdeleniya Zabaykal'skoy dorogi.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

40941

S/109/62/007/007/009/018
D271/D308

9.2571

AUTHORS: Pil'shchikov, A. I., Dunayev, N. M. and Sedletskaya, N. S.

TITLE: Magnetostatic oscillations of the magnetization in a hollow cylindrical ferrite rod

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 7, 1962, 1123-1129

TEXT: The spectrum of magnetostatic modes is analyzed for a hollow ferrite rod with conducting planes at its ends. Resonance starting with magnetostatic equations for the magnetization and field strength, differential potential equations are written out, inside and outside ferrite, and solved in Bessel functions. The results of computations are shown in graphs, for rods having the ratio of diameters of 0.5 and the ratio of length to outer diameter of 3. Instantaneous distribution of magnetization over the cross-section of the rod is shown for various modes; if the HF magnetization distribution is known, the field configuration can

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be chosen which excites a required oscillation mode. Theoretical results were checked experimentally using a specimen prepared from single-crystal manganese ferrite, at wavelengths of 3 and 6 cm, with ratios of diameters of 0.5 and 0.7, and with ratios of length to outer diameters of 3 and 5; oscillograms are given. Some absorption maxima are noticeable in the oscillograms which are not explicable by the method of analysis adopted. There are 8 figures.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova, Kafedra radiotekhniki (Department of Radioengineering, Faculty of Physics of Moscow State University im. M. V. Lomonosov)

SUBMITTED: October 24, 1961

Card 2/2

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.N., st. nauchn. sotr., otv. red.; ZAVIRYUKHINA, V.N., red.; RAKHLINA, M.P., tekhn. red.

[Plan for the diagrammatic correlation scale of the basic cross sections of Devonian, Carboniferous and Permian sediments in the southwest of the Russian Platform] Proekt skhemy korreliatsii osnovnykh razrezov devonskikh, kamennougol'nykh i permskikh otlozhenii iugo-zapada Russkoi platformy. Kiev, Izd-vo AN URSR, 1963. 72 p. [Diagrammatic correlation scales of the stratigraphy of Devonian, Carboniferous and Permian sediments in the southwestern part of the Russian Platform] Korreliatsionnye skhemy stratigrafii devonskikh, kamennougol'nykh i permskikh otlozhenii iugo-zapadnoi chasti Russkoi platformy. 13 diagrs. (MIRA 17:3)

1. Akademiya nauk URSR, Kiev. Instytut geologichnykh nauk.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.O.

The DB-6601 jointing and gauging machine. Biul.tekh.-ekon.inform. no.5:31-33 '60. (MIRA 14:3)
(Woodworking machinery)

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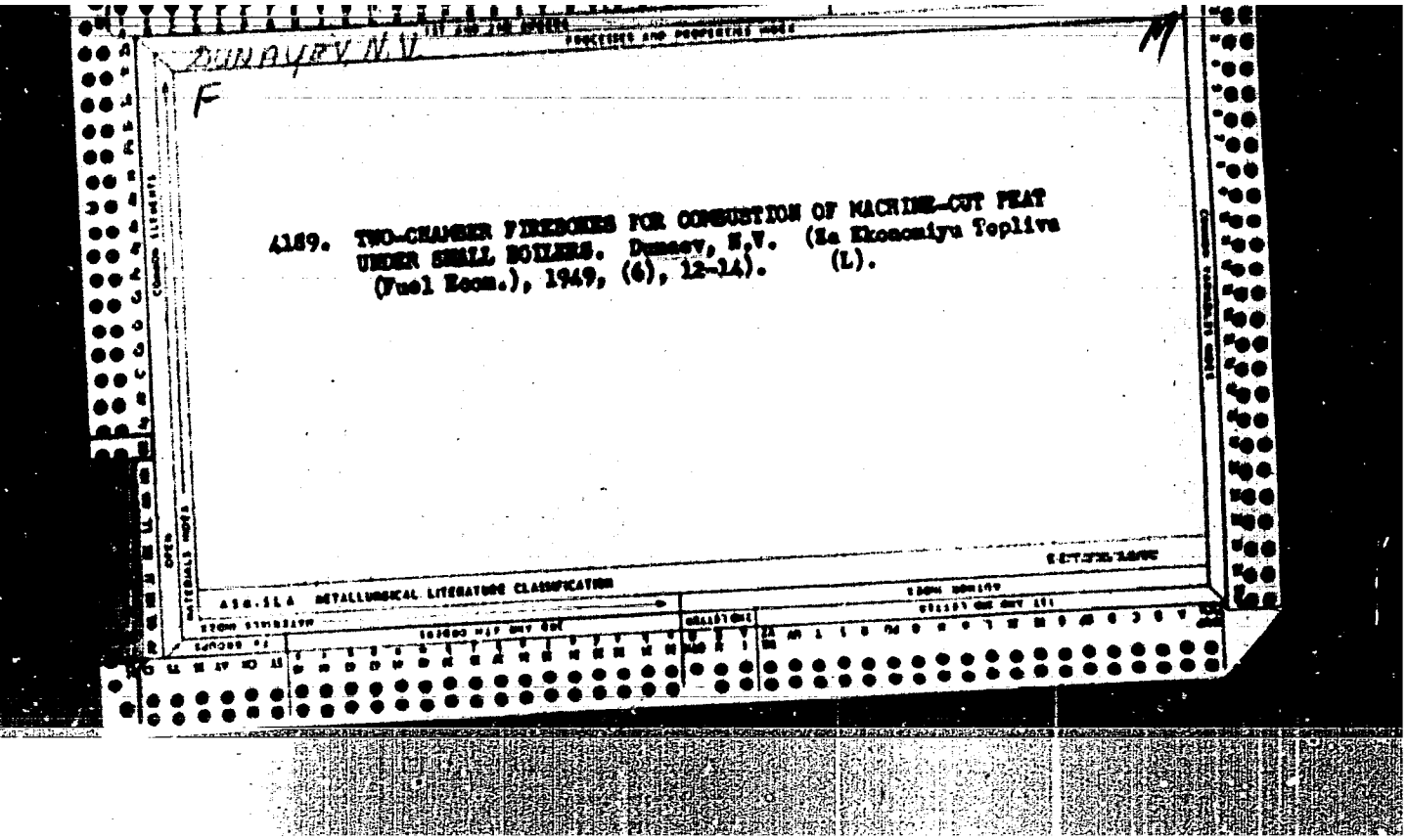
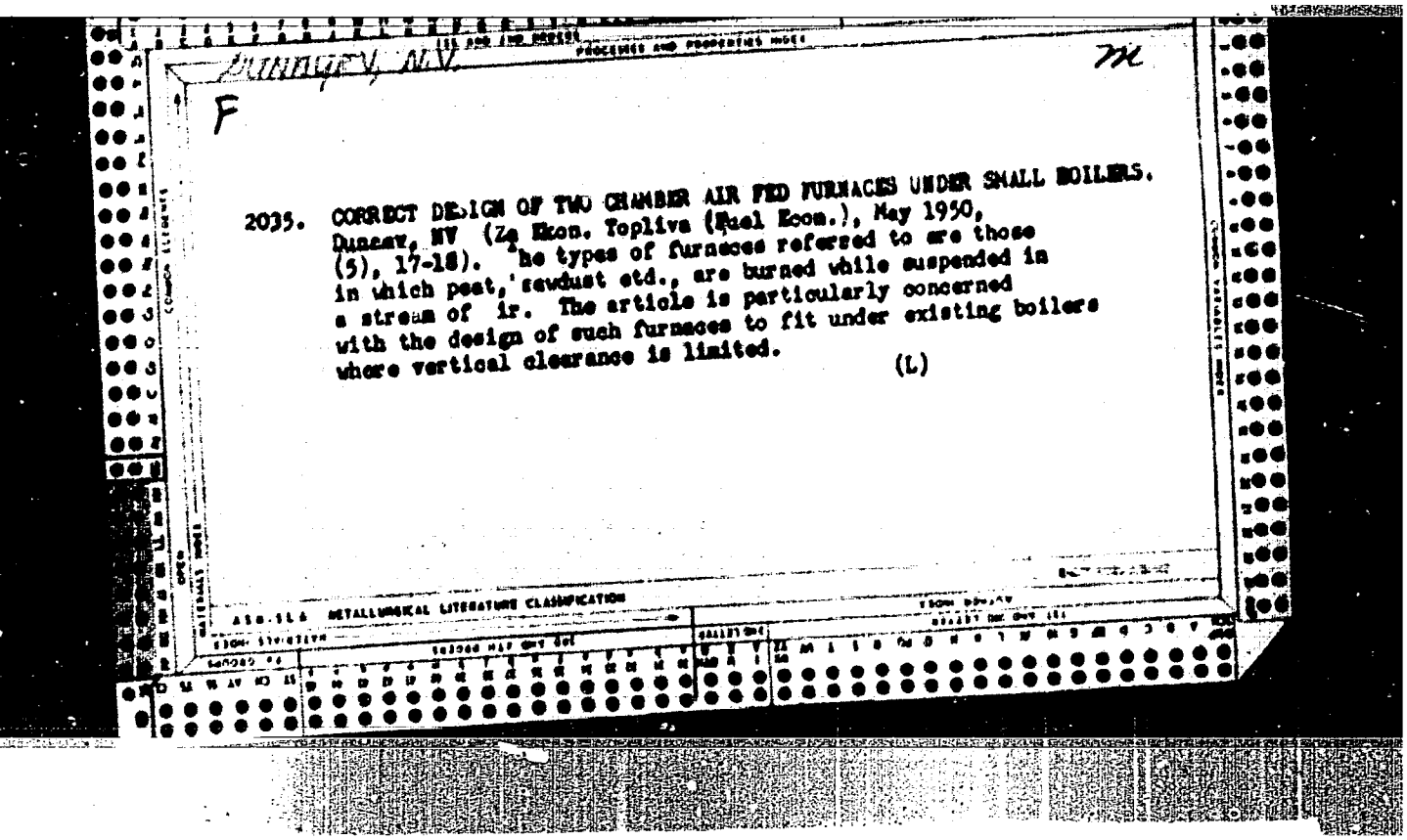


APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152



Dunsmuir, NV

F

2035. CORRECT DESIGN OF TWO CHAMBER AIR FED FURNACES UNDER SMALL BOILERS. Duncan, NV (Za Ekon. Toplivo (Fuel Econ.), May 1950, (5), 17-18). The types of furnaces referred to are those in which peat, sawdust etd., are burned while suspended in a stream of ir. The article is particularly concerned with the design of such furnaces to fit under existing boilers where vertical clearance is limited. (L)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N. Ye.

KEKELIDZE, M.A., kandidat tekhnicheskikh nauk; MCHEDLISHVILI, A.I., inshener; PEROVA, V.V., inshener; DUNAYEV, N.Ye., inshener; TAVROG, B.A., inshener.

Using Chiatura oxidized manganese ores in open-hearth pig iron burden. Metallurg. no.9:39-40 S '56. (MIRA 9:10)

1.Institut metalla i gornogo dela Akademii nauk GSSR (for Kekelidze, Mchedlishvili, Perova). 2.Stalinskiy metallurgicheskiy zavod (for Dunayev and Tavrog).
(Cast iron--Metallurgy) (Chiatura--Manganese ores)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

[redacted], inshener; TROSKUNOV, Ya.L., inshener.

T.I. Gapon's work methods in blast furnace operation. Metallurg no.10:10-14 O '56. (MLRA 9:11)

1. Stalinskiy metallurgicheskiy zavod.
(Gapon, T.I.) (Blast furnaces)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N. Ye.

133-1-4/24

AUTHORS: Glazkov, P.G., Dunayev, N.Ye., Kuzub, A.G., and Panev, G.A.

TITLE: The Production of Low-manganese Pig Using Krivoy Rog Ores and Donets Coke (Vyplavka malomargantsovistogo chuguna na Krivorozhskikh rudakh i Donetskom kokse)

PERIODICAL: Stal', 1958, No.1, pp. 14 - 20 (USSR).

ABSTRACT: Transfer of the blast furnaces on the above works to the production of pig iron with a manganese content of about 0.8 - 0.9% (as against 1.9% previously produced) is described. The decrease in manganese content was carried out in stages with simultaneous increase in slag basicity (CaO/SiO_2 about 1.3) and alumina content of slag (to about 10%) without encountering any operational difficulties. Chemical composition of raw materials is given in Table 1. Furnace-operating data - Tables 2 and 3. The dependence of sulphur content in pig on manganese content at various levels of silicon content - Fig. 1. The average monthly composition of iron and slag - Table 4. The dependence of sulphur content in pig on slag basicity - Fig.5. It is concluded that under works' operating conditions, the transfer of furnaces to the production of low-manganese pig increased the output of iron by 5-6%, decreased the coke rate by 6.5%, decreased the consumption of manganese ore by 73.5% and increased the consumption of fluxes by 6.72%. The cost of

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

The Production of Low-manganese Pig Using Krivoy Rog Ores and Donets Coke

production of pig iron decreased by 5.18%. There are 4 tables, 5 figures and 7 Russian references.

ASSOCIATION: Stalino Metallurgical Works (Stalinskiy metallurgicheskiy zavod)

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

SOV/130-58-8-3/18

AUTHORS: Dunayev, N.Ya., Ostrovskiy, Ye.G., Engineers and Popov, N.N., Candidate of Technical Sciences

TITLE: Smelting Steel-making Pig Iron with Complete Elimination of Manganese Ore from the Charge (Vyplavka peredel'nogo chuguna s polnym vyvodom iz shikhty margantsevoy rudy)

PERIODICAL: Metallurg, 1958, Nr 8, pp 8 - 10 (USSR)

ABSTRACT: Following the lead of the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine) efforts were made in the southern iron-making region of the USSR to produce low-manganese pig iron. The comparatively high coke rates and sulphur contents in the coke in the south made things difficult but the Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works) succeeded in 1955 - September, 1957 in reducing manganese-ore consumption by 50-70%, furnace productivity rising by 6%, coke rate and the cost of 1 ton of iron falling by 6% and 15-20 roubles, respectively. After a transition period, the manganese in the iron was reduced still further from 0.8-1.2 to 0.22% with further improvements in operation (table gives the main parameters for 1956 - December, 1957). It was found unnecessary to have more than 3.0-3.5% magnesia in the slag with a CaO/SiO_2 ratio of 1.28-1.30 and

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

Smelting Steel-making Pig Iron with Complete Elimination of Manganese Ore from the Charge

not less than 7-10% alumina. The favourable effect of removing managanese ores is attributed partly to the improvement of slag formation characteristics with better permeability of the stock column. The authors list the measures required for successful smelting of low-manganese iron under the conditions at the Stalino Works (including additional blast heating to 750-800 °C) and analyse operating data for a week in September, 1957 (Figures 1 and 2). These show that with more blast heating and higher basicity, the sulphur content of the iron falls and iron temperature rises. An editorial note suggests that experience at the imeni Dzerzhinskiy Works shows that slags with 5.0-5.5% alumina are satisfactory if they contain 5.5-6.0% MgO, their CaO/SiO_2 ratio = 1.28-1.30 and $(CaO + MgO + MnO)/SiO_2$ = 1.45 - 1.46.

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

SOV/130-58-8-3/18

Smelting Steel-making Pig Iron with Complete Elimination of Manganese Ore from the Charge

There are 2 figures and 1 table

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

1. Iron--Processing 2. Steel--Production 3. Manganese ores --Separation 4. Slags--Performance

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.Ye., inzh.; BOSIYEK, A.M., inzh.

Making converter pig iron with a complete removal of manganese ore from the charge. Met. i gornorud. prom. no.2:7-10 Mr-Ap '62. (MIRA 15:11)

1. Donetskiy metallurgicheskiy zavod.
(Cast iron—Metallurgy)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, N.Ye., inzh.; YAROSHEVSKIY, S.L., inzh.

Effect of natural gas on the heating and the chemical composition of cast iron. Stal' 22 no.4:296-300 Ap '62. (MIRA 15:5)
(Blast furnaces) (Gas, Natural)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

KOROSTIK, P.O.; KOTEL'NIKOV, I.V.; PANEV, G.A.; KRASAVTSEV, N.I.; SOLDATKIN, A.I.; POPOV, N.N.; DUNAYEV, N.Ye.; YAROSHEVSKIY, S.L.

Blast furnace smelting with coke made of a charge having an increased content of gas coal. Met.i gornorud. prom. no.6:7-10 N-D '63. (MIRA 18:1)

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"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, P. A.

Raschet parametrov kuznechnykh molotov. Moskva, Mashgiz, 1949. 211 p.

(Calculating the parameters of forging hammers.)

DLC: Unclass.

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(

"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152

DUNAYEV, P.A.; RAYTSES, V.B.; GUTMAN, I.M., inzhener, retsenzent; GANAGO, O.A., kandidat tekhnicheskikh nauk, retsenzent; NAUMOV, V.P., redaktor; DUGINA, N.A., tekhnicheskiy redaktor

[Blacksmithing in a machine-tractor repair shop] Kuznechnoe delo v MTM. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 125 p. (MLRA 8:7)
(Blacksmithing)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041152(